

# SUPPLEMENT.

## The Mining Journal, RAILWAY AND COMMERCIAL GAZETTE.

FORMING A COMPLETE RECORD OF THE PROCEEDINGS OF ALL PUBLIC COMPANIES.

[The MINING JOURNAL is Registered at the General Post Office as a Newspaper, and for Transmission Abroad.]

No. 2447.—VOL. LII.

LONDON, SATURDAY, JULY 15, 1882.

PRICE (WITH THE JOURNAL) SIXPENCE  
BY POST £1 4s. PER ANNUM.



McCULLOCH AND HOLMAN'S  
PATENT

### "CORNISH" ROCK DRILL.

FIRST  
SILVER  
MEDAL  
MINING  
INSTITUTE  
OF  
CORNWALL.

FIRST  
AWARD,  
BORING  
CONTEST,  
DOLCOATH  
MINE,  
DECEMBER,  
1881.



Prices and particulars on application to the Manufacturers—  
**HOLMAN BROTHERS,**  
CAMBORNE FOUNDRY AND ENGINE WORKS,  
CAMBORNE, CORNWALL.  
Engines, Air Compressors, Tunnelling  
Carriages, Tripods, &c.,  
From own design, or to order.



ESTABLISHED 1820.  
**JOSH. COOKE AND CO.,**  
**SAFETY LAMP**  
AND  
GAUZE MANUFACTORY,  
Honourable Mention, Paris Exhibition, 1878.  
Illustrated Price Lists free, by post or otherwise.  
**MIDLAND DAVY LAMP WORKS,**  
Belmont Passage, 203, Lawley-street,  
**BIRMINGHAM.**

Makers of Williamson's Double Safety Lamp,  
Williamson's Patent Double Safety Lamp shown half in  
section.

Medal—For Improved Invention—London, Kensington, 1874.  
Excellence of Workmanship—Wrexham 187

### IMPROVED PATENT INGERSOLL ROCK DRILL MEDALS AND HIGHEST AWARDS.

American Institute, 1872.  
American Institute, 1873.  
London International Exhibition, 1874.  
Manchester Scientific Society, 1875.  
Leeds Exhibition, 1875.  
Royal Cornwall Polytechnic, 1875.

Rio de Janeiro Exhibition, 1875.  
Australia Brisbane Exhibition, 1876.  
Philadelphia Exhibition, 1876.  
Royal Cornwall Polytechnic, 1877.  
Mining Institute of Cornwall, 1877.  
Paris Exhibition, 1878.

**LE GROS, MAYNE, LEAVER, & CO.,**  
60, Queen Victoria Street, London, E.C.,  
SOLE AGENTS FOR THE

**DUSSELDORF**

WROUGHT IRON STEAM TUBE WORKS.

TUBES FOR BOILERS, PERKINS'S, and other HOT-WATER SYSTEMS.

For Catalogues of Rock Drills, Air Compressors, Steel or Iron Steam Tubes,  
Boiler Tubes, Perkins's Tubes, Pneumatic Tubes, Boring Tubes, and all kinds of  
Machinery and Mining Plant, apply—

60, QUEEN VICTORIA STREET, E.C.

### NORMANDY ROCK DRILL. NORMANDY AIR COMPRESSOR.

THESE PATENT MACHINES ARE VALVELESS.

RESULTS OF TRIALS at CARDIFF EXHIBITION, on a block  
of Cornish Granite, on 24th September, 1881:—

	Inches.	min. sec.
Normandy Rock Drill and Air Compressor, bored	1 1/4 x 10 1/2	2 10
Eclipse Rock Drill and Reliance Air Compressor	1 3/4 x 10 1/2	2 25
Beaumont Rock Drill and Sturgeon's Trunk Air Compressor	1 1/2 x 7 1/2	2 30

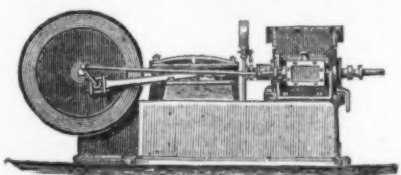
Normandy's have WON TWO GOLD MEDALS at the Melbourne Exhibition, 1880, and being the simplest, ARE MUCH THE CHEAPEST in first cost and in repairs.

**A. NORMANDY, STILWELL, & CO.,**  
OPPOSITE CUSTOM HOUSE STATION,  
**VICTORIA DOCKS, LONDON, E.**

### THE PATENT "ECLIPSE" ROCK-DRILL

AND  
"RELIANCE" AIR-COMPRESSOR

PRIZE MEDAL,  
HIGHEST AWARD.



PARIS EXHIBITION  
1878.

ARE NOW SUPPLIED TO THE  
ENGLISH, FOREIGN, AND COLONIAL GOVERNMENTS  
And are also in use in a number of the  
LARGEST MINES, RAILWAYS, QUARRIES, AND HARBOUR  
WORKS IN GREAT BRITAIN AND ABROAD  
FOR ILLUSTRATED CATALOGUE AND PRICES apply to—  
**HATHORN & CO., 22, Charing Cross, London, S.W.**

### "Kainotomon" Rock Drill

SELECTED BY THE  
BRITISH, PRUSSIAN, & SAXON  
GOVERNMENTS.

OPEN TO ACT AS CORRESPONDENT  
OR AGENT TO



FOREIGN OR COLONY  
COMPANIES.

**SUPERIOR AIR COMPRESSORS.**  
MACHINERY OF EVERY DESCRIPTION.

**T. A. WARRINGTON,**  
30, King-street, Cheapside, London.

### THE "Barrow" Rock Drill COMPANY.

HOSKING AND BLACKWELL'S PATENT.



The DRILLS are exceedingly STRONG, LIGHT, SIMPLE, and adapted for ends  
slopes, quarries, and the sinking of shafts. They can be worked by any miner.

Their DRILLS have most satisfactorily stood the TEST of LONG  
and CONTINUOUS WORK in the HARDEST KNOWN ROCK in  
numerous mines in Great Britain and other countries clearly proving  
their DURABILITY and POWER.

About 200 are now at work driving from three to six times the  
speed of hand labour, and at from 20 to 30 per cent. less cost per  
fathom. They can be worked by any miner.

For PRICES, Particulars and Reports of Successful and Economical  
Working, apply to—

**LOAM AND SON,**  
**LISKEARD, CORNWALL.**

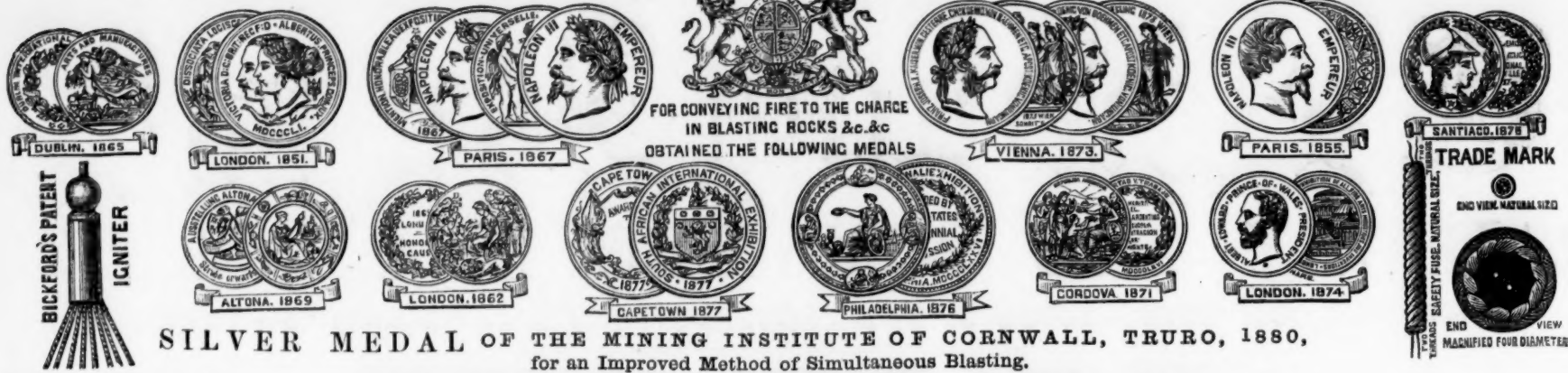
### ROCK DRILLS AND AIR COMPRESSORS

**WARSOP AND HILL, ENGINEERS, NOTTINGHAM,**  
ARE PREPARED TO CONTRACT FOR  
DRIVING LEVELS or SINKING SHAFTS, &c., by machinery  
with all the recent improvements to ensure rapid advance; or  
SUPPLY and FIX PLANTS, complete.  
STEAM CAPSTANS and UNDERGROUND HAULAGE  
SPECIALITY



FIRST AWARD.  
SYDNEY. 1879.

## BICKFORD'S PATENT FUSES

FIRST AWARD.  
MELBOURNE, 1881.SILVER MEDAL OF THE MINING INSTITUTE OF CORNWALL, TRURO, 1880,  
for an Improved Method of Simultaneous Blasting.

FOR SIMULTANEOUS BLASTING.

## BICKFORD, SMITH AND CO.,

THE INVENTORS, AND ORIGINAL PATENTEES AND MANUFACTURERS OF

## SAFETY AND INSTANTANEOUS FUSES AND IGNITERS

FOR USE IN ALL BLASTING OPERATIONS AND SPECIALLY PREPARED FOR ANY CLIMATE

Note the **TRADE MARK**: Two Separate threads through centre of Fuse.

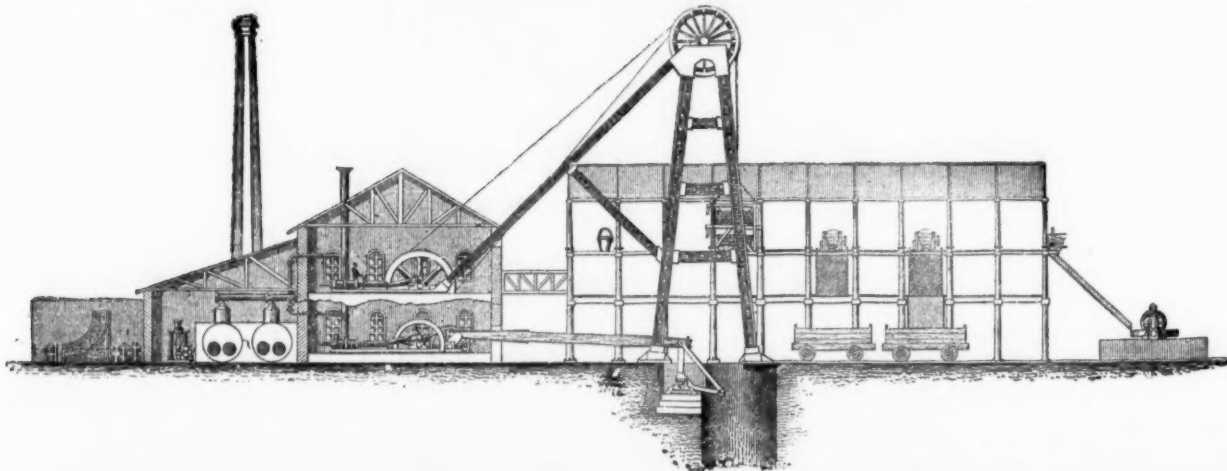
BICKFORD, SMITH AND CO.'S Patent Igniters and Instantaneous Fuses for simultaneous blasting are being extensively used at home and abroad. This improved method is the cheapest, simplest, and most dependable ever introduced for simultaneously firing any number of charges. For full particulars, see Descriptive Catalogue.

PRICE LISTS, DESCRIPTIVE CATALOGUES, AND SAMPLES TO BE HAD ON APPLICATION.

FACTORIES—TUCKINGMILL CORNWALL; AND ST. HELENS JUNCTION, LANCASHIRE.

HEAD OFFICE—TUCKINGMILL, CORNWALL.  
LANCASHIRE OFFICE—ADELPHI BANK CHAMBERS, SOUTH JOHN STREET, LIVERPOOL  
LONDON OFFICE—85, GRACECHURCH STREET, E.C.

Every package bears Bickford, Smith, and Co.'s copyright label.



## YEADON AND CO., LEEDS, ENGLAND,

Engineers and Contractors for every description of Plant for Collieries, Mines, and Brickworks.

## COLLIERIES.

WINDING, HAULING, AND PUMPING ENGINES; AIR COMPRESSORS; DIRECT-ACTING STEAM PUMPS; VENTILATING FANS; SEMI-PORTABLE BOILERS AND ENGINES COMBINED; PIT-HEAD PULLEYS; WIRE ROPES; WROUGHT-IRON HEAD GEAR, CAGES, and SCREENS; BOILERS PATENT DETACHING HOOKS; COAL WASHING MACHINES; STEAM HAMMERS; STEAM CAPSTANS; PUMPS; VALVES. PATENT BRIQUETTE MACHINES (for Compressed Fuel).

## MINES.

CORNISH CRUSHERS and STAMPING MILLS; WATER WHEELS; REVOLVING and OTHER SCREENS; BLAKE'S ORE CRUSHERS; JIGGERS; BUDDLES; ORE-WASHING MACHINES; GRINDING and AMALGAMATING PANS; WELL-BORING MACHINERY; WIRE TRAMWAYS.

## BRICKWORKS.

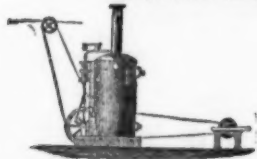
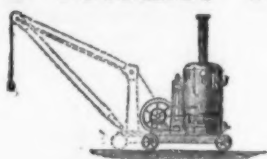
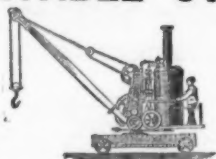
PATENT BRICK MACHINES for DRY, SEMI-DRY, and PLASTIC CLAY; WET and PERFORATED CLAY GRINDING PANS; CLAY ROLLS PUG MILLS; MORTAR MILLS; FRICTION HOISTS; PIPE-MAKING MACHINES; BRICK PRESSES; PATENT KILNS.

PLANS, SPECIFICATIONS, AND ESTIMATES FOR COMPLETE PLANTS ON APPLICATION.

BEST DESIGNS, WORKMANSHIP, and MATERIAL THROUGHOUT.

N.B.—Experienced workmen sent out, if required, to Erect or Manage. Considerable Saving in Prices by dealing direct with us, having for many years been chiefly engaged in the manufacture of Colliery, Mining, and Brickmaking Plants.

## CHAPLIN'S PATENT PORTABLE STEAM ENGINES AND BOILERS.

STATIONARY ENGINE.  
No Building required.HOISTING ENGINE.  
With or without Jib.STEAM CRANE.  
For Wharf or Rail.

CONTRACTORS' LOCOMOTIVE.



SHIPS' ENGINE AND DISTILLER.



PUMPING AND WINDING ENGINE.

\* These Cranes were selected by H.M. Commissioners to receive and send away the Heavy Machinery in the International Exhibitions 1862, 1871, and 1872.

The ORIGINAL combined Vertical Engines and Boilers, introduced by Mr. ALEX. CHAPLIN, specially designed and adapted for PUMPING, WINDING, HOISTING, SAWING, DRIVING MACHINERY, and for GENERAL CONTRACTORS' WORK, RAILWAY SIDINGS, COAL MINES, QUARRIES, GAS WORKS, &amp;c.

## THE AGRICULTURAL AND GENERAL ENGINEERING COMPANY (Limited),

LATE WIMSHURST, HOLLICK, AND CO., ENGINEERS

CITY OFFICES:—2, WALBROOK, LONDON, E.C.

WORKS—REGENT'S CANAL DOCK, 602, COMMERCIAL ROAD EAST.



# I. COPLEY & CO., ENGINEERS AND BOILER MAKERS, MIDDLESBOROUGH, YORKSHIRE.

SOLE MAKERS

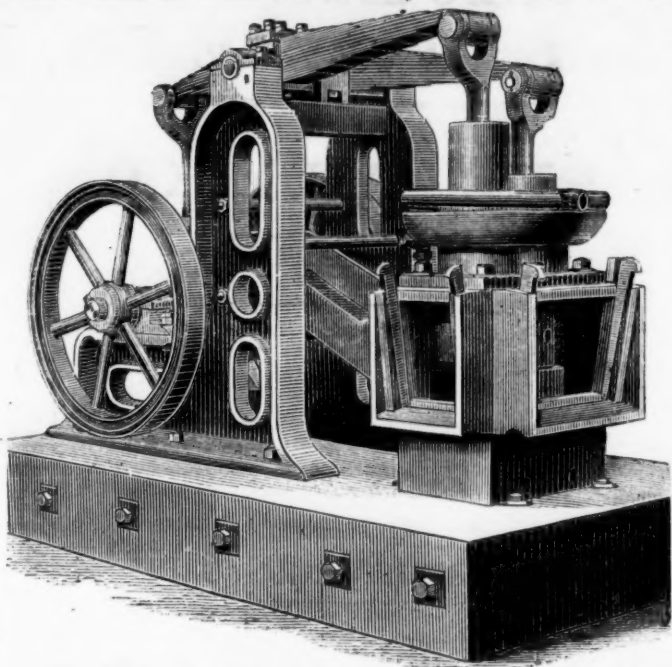
OF

**DUNHAM'S  
AMERICAN SPRING BEAM  
ORE STAMPS.**

COMBINING ALL THE FEATURES WHICH  
EXPERIENCE HAS BROUGHT ABOUT IN REDUCING

**GOLD QUARTZ.**

These Machines are guaranteed to  
reduce more Quartz with less applied  
power than any Machines in the market.



THIS MACHINE CAN BE SEEN  
WORKING IN LONDON STAMPING

**"GOLD QUARTZ,"**

INVITATIONS WITH  
PROSPECTUSES WILL BE SENT  
TO THOSE INTERESTED ON  
APPLICATION.

N.B.—Quartz from abroad reduced  
for analysis through meshes of 400 to  
900 holes to the square inch.

**GOLD QUARTZ STAMPER.**

LONDON AGENT:—A. H. REED, 90. CANNON STREET, E.C.

## R. HUDSON'S PATENT STEEL (OR IRON) TRUCKS

ARE THE

**LIGHTEST, STRONGEST, AND MOST CAPACIOUS MADE.**

PATENTED EUROPE, AMERICA, AND BRITISH SOUTH AFRICA, No. 2677, No. 50, No. 3782, No. 102, AND No. 4683.

WITH OR WITHOUT "END" DOORS AND "SWIVELLING" UNDERCARRIAGE FOR  
TIPPING AT EITHER SIDE OR END OF RAILS.

THOUSANDS IN USE BOTH AT HOME AND ABROAD.

Made to any size or gauge of rails  
Over 100 Trucks turned out weekly.



**R. HUDSON, GILDERSOME FOUNDRY, NEAR LEEDS.**

## MANCHESTER WIRE WORKS.

NEAR VICTORIA STATION, MANCHESTER.  
(ESTABLISHED 1790).

**JOHN STANIAR AND CO.,**

Manufacturers by STEAM POWER of all kinds of Wire Web, EXTRA TREBLE STRONG for  
LEAD AND COPPER MINES.

Jigger Bottoms and Cylinder Covers woven ANY WIDTH, in Iron, Steel, Brass, or Copper  
EXTRA STRONG PERFORATED ZINC AND COPPER RIDDLES AND SIEVES

PERFORATED IRON, STEEL, COPPER, AND ZINC PLATES IN VARIOUS DIMENSIONS AND THICKNESSES.  
Shipping Orders Executed with the Greatest Dispatch

GOLD MEDAL AWARDED, PARIS EXHIBITION. 1878.

**THOMAS TURTON AND SONS,**

MANUFACTURERS OF

**MINING STEEL of every description.**

CAST STEEL FOR TOOLS. CHISEL. SHEAR. BLISTER. & SPRING STEEL  
MINING TOOLS & FILES of superior quality.

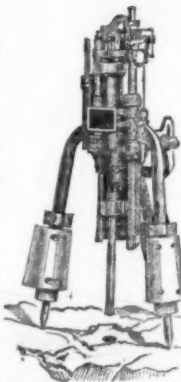
EDGE TOOLS, HAMMERS, PICKS, and all kinds of TOOLS for RAILWAYS, ENGINEERS, CONTRACTORS, and PLATELAYERS.  
LOCOMOTIVE ENGINE, RAILWAY CARRIAGE and WAGON SPRINGS and BUFFERS.

**SHEAF WORKS & SPRING WORKS, SHEFFIELD.**

LONDON OFFICES—90, CANNON STREET, E.C. PARIS DEPOT—12, RUE DES ARCHIVES. 20 MASS., U.S.—40, KILBY STREET.

## THE "BEAUMONT" PATENT PERCUSSIVE ROCK DRILL.

(BEAUMONT AND FOSTER'S PATENT.)



The "BEAUMONT" DRILL is now  
offered to the public.

For the last three years it has been solely  
used with complete success by the Aqueous  
Works and Diamond Rock Boring Company  
(Limited), and Messrs. Beaumont and Co.  
in their several large contracts.

During this time it has been improved  
and developed as to make it without doubt  
the best Percussive Rock Drill offered for  
Tunnelling, Mining, or Quarrying Work.

Price and prospectus on application to  
the Manufacturer,—

**JOSEPH FOSTER,**  
MINING ENGINEER

BOW LANE IRONWORKS,  
PRESTON, LANCASHIRE.

THE AQUEOUS WORKS AND DIAMOND ROCK-BORING COMPANY  
(LIMITED).

CROWN WORKS, GUILDFORD STREET, YORK ROAD  
LAMBETH, LONDON.

MESSRS. BEAUMONT AND CO.,

3, VICTORIA STREET, S.W., WESTMINSTER, LONDON.

Tripods, Tunnelling Carriages, Gadding Cars, Air  
Compressors, Air Pipes, and other Mining  
Machinery supplied.



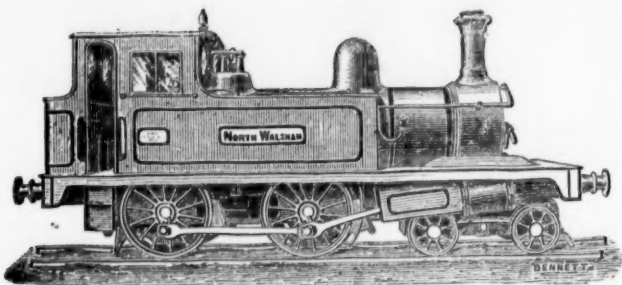
Pumping Engines  
for  
Mines, Water Works,  
Sewage Works,  
and  
General Purposes.  
CATALOGUES ON

# PUMPING & MINING MACHINERY. HATHORN, DAVEY, & CO., LEEDS.

Hydraulic Pumps.  
Winding Engines.  
Air Compressors.  
Man Engines.  
Capstans,  
&c., &c.  
APPLICATION.

ESTABLISHED 1860.

## HUDSWELL, CLARKE, AND CO., LEEDS.



### LOCOMOTIVE TANK ENGINES

OF ALL SIZES AND ANY GAUGE OF RAILWAY.  
OF GREATLY IMPROVED CONSTRUCTION  
FOR MAIN OR BRANCH RAILWAYS.  
CONTRACTORS, IRONWORKS, COLLIERIES.  
For Cash or Deferred Payments.

SOLE MAKERS OF RODGERS' PATENT WROUGHT-IRON PULLEYS.

## SAMUEL OSBORN AND CO., MANUFACTURERS OF TOUGHENED CRUCIBLE STEEL CASTINGS

Of all descriptions of special strength and solidity.

ALSO, MANUFACTURERS OF  
BEST CAST STEEL FOR ENGINEERS AND MINERS' PURPOSES; FILES; SAWS; HAMMERS; RAILWAY SPRINGS, &c  
STEEL SHEETS AND FORGINGS.

SOLE MAKERS OF  
"R. Mushet's Special Steel," for Lathe and Planing Tools and Drills.  
THE STEEL WHICH REQUIRES NO HARDENING.

And R. Mushet's Celebrated Extra Best Welding Titanic Cast Steel  
for Borers.

ADDRESS:—

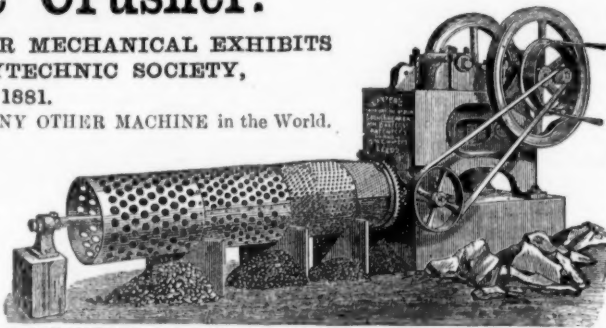
## CLYDE STEEL AND IRON WORKS, SHEFFIELD.

### The Only Knapping Motion Stone Breaker and Ore Crusher.

AWARDED THE ONLY SILVER MEDAL FOR MECHANICAL EXHIBITS  
AT THE ROYAL CORNWALL POLYTECHNIC SOCIETY,  
FALMOUTH, SEPT., 1881.

GUARANTEED to do MORE WORK with less power THAN ANY OTHER MACHINE in the World.  
READ THIS—

The Bold Venture Lime and Stone Co., Peak Forest,  
Messrs. W. H. Baxter and Co., June 8, 1881.  
GENTLEMEN,—We have the pleasure to inform you that the  
20 by 9 Stone Breaker supplied by you is now working to our  
entire satisfaction, and we are now able to fulfil our contract  
with ease, which we had much difficulty in doing before with the  
Blake Machine. It takes less power and turns out considerably  
more stone.  
Yours truly,  
BOLD VENTURE LIME AND STONE COMPANY.



GUARANTEED NO INFRINGEMENT OF ANY OTHER PATENT.

YORKSHIRE AGRICULTURAL SOCIETY SHOW, HALIFAX, AUGUST 1ST, 2ND, AND 3RD.

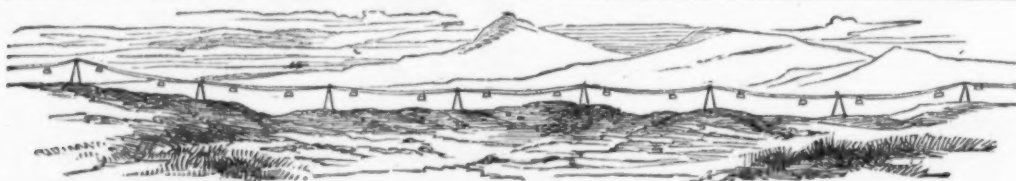
W. H. BAXTER & CO. beg to announce that they will exhibit one of their 16 by 9 PATENT KNAPPING  
MOTION STONE BREAKERS, with Patent Draw-back Motion on Wheels, and with Improved Revolving Screen and  
all the latest improvements, and Challenge any other maker of Stone Breakers to come forward with a Machine the  
same size to do the same amount of work with the same power and in the same time either for Breaking or Crushing  
any kind of material.

FOR FULL PARTICULARS ADDRESS TO THE PATENTEES AND SOLE MAKERS,

## W. H. BAXTER & CO., ALBION STREET, LEEDS.

SOLE AGENTS FOR LONDON AND DISTRICT—

THOMAS GREEN AND SON (LIMITED), ENGINEERS, BLACKFRIARS ROAD, LONDON, S.E.



### PATENT WIRE TRAMWAYS

Of all descriptions on the Single and Double-Rope Systems; Self-Acting, and Driven by Steam  
Water, or Horse Power.

Carrying from 50 to 1,000 tons per day Over 150 miles erected in all parts of the world. For Particulars and Estimates app

W. T. H. CARRINGTON, 76, Cheapside, London,

ENGINEER AND MANAGER TO THE OWNERS OF THE PATENTS FOR WIRE ROPE TRANSPORT

### ASBESTOS.

ASBESTOS ENGINE PACKING,  
ASBESTOS MILLBOARD JOINTING  
A BESTOS BOILER COVERING  
ASBESTOS CEMENT.

ARE UNRIVALLED.

Price Lists and all information from the UNITED ASBESTOS COMPANY (LIMITED):—

HEAD OFFICES:—161, QUEEN VICTORIA STREET, LONDON,  
WORKS:—ROME, TURIN, AND GLASGOW.

### THE EXCELSIOR ROCK DRILL.

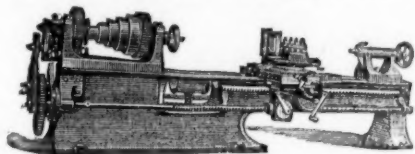
The construction of this Drill is remarkably simple. There being ONLY ONE MOVING PART—the piston—it is almost impossible to get out of order. The air is taken in through the gland, and by a peculiar arrangement of ports and passages the motion of the piston automatically admits and cuts off the supply of air to each end of the cylinder.

Its chief advantages are simplicity, durability, strength, and lightness, economy in first cost, consumption of air and repairs, adjustability of cradle and length of feed. Invaluable for use in foreign countries where repairs are so difficult and expensive. The makers undertake to keep the machine in repair entirely free of cost for six months from date of purchase. In order to prove the superiority of these machines, the makers are prepared to send one on trial to any Mining or Tunnelling Company, they being at perfect liberty either to keep it or return it after trial.

For prices, particulars, &amp;c., apply to—

J. H. WYNNE,  
LOWER BRIDGE STREET, CHESTER.

EASTERBROOK, ALLCARD, AND WILD,  
TOOL MAKERS, SHEFFIELD.



Upwards of FIFTY MACHINE TOOLS ALWAYS in STOCK or IN PROGRESS.  
WRITE FOR LIST.

ALEXANDER SMITH, M.Inst.C.E., CONSULTING  
ENGINEER AND VALUER OF IRONWORKS,  
MINING, RAILWAY, ENGINEERING, and other PROPERTY,  
PLANT, and MACHINERY,  
PRIORY STREET, DUDLEY.

4, BURLINGTON CHAMBERS, NEW STREET, BIRMINGHAM.

Mr. SMITH has been retained for nearly 20 years by some of the most prominent firms, and has conducted many of the largest valuations that have taken place in the kingdom  
Valuations for Stock Taking or any other purpose upon very reasonable terms

ASSURANCE AGAINST ACCIDENTS OF ALL KINDS  
ASSURANCE AGAINST RAILWAY ACCIDENTS ALONE.  
ASSURANCE AGAINST FATAL ACCIDENTS AT SEA.  
ASSURANCE OF EMPLOYERS' LIABILITY.

RAILWAY PASSENGERS ASSURANCE COMPANY  
The oldest and largest Company, insuring against Accidents of all kinds.  
The Right Hon. LORD KINNAIRD, Chairman.

SUBSCRIBED CAPITAL ... .. £1,000,000  
PAID-UP CAPITAL AND RESERVE ... .. £240,000  
MODERATE PREMIUMS.  
BONUS ALLOWED TO INSURERS AFTER FIVE YEARS  
£1,700,000

HAS BEEN PAID AS COMPENSATION  
Apply to the Clerks at the Railway Stations, the Local Agents, or  
64, CORNHILL,  
Or 8, Grand Hotel Buildings, Charing Cross, London.

WILLIAM J. VIAN, Secretary.

MAPS OF THE MINES, AND OF UTAH TERRITORY

FROISETH'S NEW AND REVISED MAP FOR 1875.—  
Size 40 by 56 inches, scale 8 miles to the inch. Handsomely engraved, coloured in counties, showing the Towns, Settlements, Rivers, Lakes, Railroads, Mining Districts, &c., throughout the Territory, and all the Government Survey (date). Mounted on cloth, £2; half-mounted, £1 12s.; pocket form, £1.  
Also, GENERAL MINING MAP OF UTAH, showing twenty-eight of the principal Mining Districts adjacent to Salt Lake City, and location of the most prominent mines. Price, pocket form, 6s.  
Also, NEW MAP OF LITTLE AND BIG COTTONWOOD MINING DISTRICTS showing the location of over Four Hundred Mines and Tunnel Sites, together with the Mines Surveyed for United States Patent. Price, sheets, 6s.; pocket form, 8s.

For sale, and supplied by—  
TRUBNER AND CO., 57 and 59 Ludgate Hill, London.  
B. A. M. FROISETH, Salt Lake City, Utah, U.S.

Just published, cloth limp, price 1s. 6d.,

THE COLLIERY READY-RECKONER AND WAGES  
CALCULATOR.

By JAMES IRELAND

"Will be the means of preventing many disputes between pay clerks and colliers."—Mining Journal  
To be had on application at the MINING JOURNAL Office, 26, Fleet-street, E.C.

Just published.

THE NORTH WALES COAL FIELDS  
Being a series of Diagrams showing the Depth, Thickness, and Local Names of the Seams in the principal Collieries of the various districts, with Index, Geological Map, and horizontal sections across the Ruabon, Brynbo, Buckley, and Mostyn districts.

By JOHN BATES GREGORY and JESSE PRICE,  
of Hope Station, near Mold, Flintshire.  
Price: Mounted on holland, coloured and varnished, and fixed on mahogany rollers, 30s. each; or in book form, 12s. 6d. mounted and coloured, 25s. each.  
May be obtained, by order, of all Booksellers or direct from the MINING JOURNAL Office, 26, Fleet-street, London, E.C., upon remittance of Post Office Order for the amount.



## Original Correspondence.

## THE KIMBERLEY DIAMOND FIELDS, AND ILLICIT DIAMOND BUYING.

SIR,—As your Kimberley Correspondent has given you a rather too sensational account of the great meeting at that place for the very creditable purpose of putting an end to the scandalous system of dealing in stolen diamonds, which is but too much practised in South Africa, I am sure you will be glad to publish some extracts which I subjoin from to-day's Cape Times, which will have the effect of removing that feeling of irritation which your correspondent's letter has caused to certain gentlemen who are certainly not deserving of the insinuations cast upon them. I need scarcely inform the readers of the *Mining Journal* that the managers of diamond mining enterprises out here are much more interested than anyone else in putting down the traffic in stolen diamonds, for it is evident that if the buyers can be got at and punished, the inducement for workmen and miners to steal the diamonds will be removed, and the credit of the managers will be raised, because they will be able to give better dividends to their shareholders. The Cape Times, certainly one of the most reliable newspapers in the colony, truly states that in the early stage of the present Session of Parliament it may be remembered that an immense to-do was made at Kimberley and Dutoitspan about the contemplated legislation for the suppression of the illicit diamond trade. One of the local Kimberley fashions (not by any means an admirable one) is to deal with the members for the constituency as though they represented hostile camps; and, after the pattern of Eatonswill, a local journal is devoted to the interests of each. This condition of affairs must often be inconvenient to the gentlemen principally concerned, who have a common interest and are equally earnest in their endeavour to purge the diamond mining community of the element which now demoralises and degrades it. And, perhaps, never was this inconvenience more painfully felt than on the occasion in question, when a public meeting was hastily summoned to express a vote of confidence in Dr. Matthews, who at the time was not in the slightest need of any such support or encouragement. The meeting was called, and in the invitational posters an especial appeal was made to the overseers employed by mining companies to attend and to demand higher rates of salary as a protection against diamond stealing.

But, in justice to working miners as a body, and to managers of diamond mines individually, and without a single exception, I do not hesitate to say that had the matter of dealing with the illicit diamond buyers been in their hands it would long since have been extinguished, but the truth is that both illicit buyers and illicit sellers were exerting themselves through a medium which was carefully kept in the background. "Justice for the Licensed Victuallers" was, as the Cape Times observes, ostensibly the main object of the meeting, but this justice was supposed to be particularly associated with some new departure in the repression of illicit diamond buying, and there was evidently at the bottom of it all a personal grievance. The overseers resented the appeal made to them; they did not care to have it trumpeted to the world that their honesty was only to be secured by higher pay, nor were they disposed to join in an agitation which would bring any class interest to bear upon the proposed legislation, save only the interest of honest men which, in the long run, is the interest of the community. They attended the meeting, however, but not in the spirit desired by its promoters, and the proceedings did not end in perfect harmony. Of course, sensational reports of all that took place, and probably of a good deal that did not take place appeared in the Kimberley newspapers, and Messrs. Robinson, Ward, and Kilgour, who had taken a part displeasing to the promoters, were roughly handled in print. So far no one was much the worse, except, perhaps, one journalist, who, sitting on the cart appropriated to the band, was struck by some unknown assailant, but not seriously hurt. Such contretemps will happen when mob law is resorted to, and the erratic weapon will sometimes knock at the wrong door.

The account of the proceedings at Kimberley was read here without creating much attention, and everyone supposed that no more would have been heard of the matter. I am sorry, however, to say that by the last post we received the *Mining Journal*, which is recognised throughout South Africa as a newspaper circulated amongst engineers, mining shareholders, and having generally a respectable clientele, in which a letter appears from a correspondent at Kimberley, giving a wonderful sketch of this historical episode. The demonstration of the overseers is ascribed therein to the fright taken by managers and directors of mining companies at the prospect of strange revelations; their movements are said to have been directed by illicit diamond buyers on horseback, and with these disreputable marshals are classed Messrs. Robinson, Ward, and Kilgour. Now, if this kind of stuff were written to a colonial newspaper it would convey its own reputation, but in an English journal it may have a seriously damaging effect, not merely on personal character, but on the general reputation of the diamond mining community. Mr. Ward, who was for many years surveyor of the Kimberley Mine, used sometimes to irritate the independent digger with his brusque exercise of authority, but therein he was no respecter of persons, a man transparently honest. Now Mr. Ward is manager of the Anglo-African Mining Company, and as such is closely interested in putting down the illicit diamond traffic as the manager of a financial institution would be in discouraging forgery. Mr. Robinson, one of the members for Kimberley, has an enormous stake in the prosperity of the mining companies, which the illicit trader is industriously sapping. Mr. Kilgour, as manager of the London and South African Exploration Company, would simply commit financial suicide if he were to connive at the illicit commerce. These things go without saying on the diamond fields and in South Africa generally. Whatever the gentlemen mentioned may be in other respects, they are pledged by every consideration of private and associated interest to do their utmost for the eradication of the illicit diamond buyer, and hence, probably, the insidious calumny. For in England these considerations are not self-evident, and a liberal allowance is ever made in the case of persons of previous good repute for the demoralising influence of life abroad. What, therefore, the effect upon shareholders of the companies with which these gentlemen's names are connected may be, it is impossible to conjecture. The *Mining Journal* has a special circulation, and where mining shares are marketable would be quoted as of authority; and this would be peculiarly gratifying to the shareholders of the London and South African Exploration Company, of the Anglo-African Mining Company, and of the many similar ventures with which Mr. Robinson is concerned now introduced to European markets.

It is very truly stated that the motive of the attack may be referred to the action of the three gentlemen in question at the last meeting of the Kimberley Licensing Board. Rightly or wrongly believing that much of the illicit diamond trade was carried on in canteens of a certain class, they exerted all their influence for the reduction of the number of liquor shops, and thereby effected a rejection of about half the applications sent in. By this severity they incurred much animosity at the time, and the resentment of the reduced canteen keeper was eagerly seconded by the fear of the illicit diamond buyers. The business of these gentry, always precarious, was threatened at the time with destructive inroads from the exertions of the Diamond Mining Protection Society to the managing committee, of which Messrs. Robinson, Kilgour, and Ward belonged. By discrediting the more active members of such an association, and by imputing to them a base complicity in the crime of which they professed to seek the extirpation, the course of legislation might be diverted, possibly even the constitutional Palladium of the British jury restored for the protection of the subject now harassed by vexatious special courts. It is improbable that the more respectable licensed victuallers had anything to do with the matter, but this really matters little. What is really of importance is the reflection upon the character of the mining community and of mining investments from the appearance of such a communication in an influential English newspaper. Who will touch mining shares when the men who take the foremost place in bringing about and moulding legislation for the protection of the diamond trade are represented as leaders of the mysterious association which saps the life of the diamond mining industry? Truly a fine prospect for the investor when the control of the investment and

the protection of its returns are in the hands of the head centres of knavery. Mr. Leonard's Libel Bill will be justified in its severity if applied to the correspondent of the *Mining Journal*. So respectable a newspaper would not have published the letter without some assurance of the writer's position. Whatever proceedings may be taken in the matter it would be altogether more consistent with the fitness of things, and more satisfactory to the public sentiment, if the penalty were to fall on the author of the letter, and in some way of local example, rather than on the misled and innocent publisher.

I may say, in conclusion, that the views here expressed precisely represent those entertained by every respectable man, whether engaged in diamond mining or in any other class of commercial industry throughout South Africa. Everyone, unless actually engaged in the traffic—and these are really very few—is desirous of seeing illicit diamond buying effectually stamped out; and I may assure the readers of the *Mining Journal* that Messrs. Kilgour, Ward, and Robinson are amongst the most able as well as the most willing workers in this direction; hence the base insinuations sometimes made against them. For the moment diamond mining is much depressed here owing to valuable and worthless diamond mining enterprise having been simultaneously offered in the British market; but it is an industry which, on the whole, will yield ample profits upon almost any amount of working capital, although when fabulous amounts are permitted to go into the pockets of vendors and promoters, the amounts otherwise available for dividends are, of course, absorbed, and irreparable injury is done to the district and to mining generally.—*Graff Town, June 20.*

FAIR PLAY.

## GOLD AND DIAMOND MINING IN SOUTH AFRICA.

SIR,—It seems like downright mockery in the present state of the diamond fields for some of your contemporaries to be always writing of their continued and undiminished prosperity. The diamond fields were never so dull as at the present time, and their best friends are those who acknowledge the fact, and are willing to do all in their power to provide a remedy. It is a recognised fact that the diamond fields have given vitality to the whole of South Africa, and their prosperity or adversity is keenly felt from the capital of the colony to the meanest hamlet. At the present time this fact is painfully apparent, as may be seen from the following:—"The Month's Insolvencies. During the month last past 59 insolvencies and 6 compulsory sequestrations were registered, as against 12 insolvencies and 5 compulsory sequestrations during the corresponding month of 1881.—*Argus (Cape Town).*" The above number of insolvencies is only in Cape Town; it is worse here in proportion to the population, and there is not a town or village in the country that does not feel the depression in a corresponding ratio. The cause of all this depression is not through any depreciation of the value of the mines. The ground that was good 10 years ago is good to-day, and the ground that was known to be bad 10 years ago is bad to-day. Take, for example, the De Beers Mine, and we find that the ground which has been put into De Beers Mining Company, Baxter's Gully, De Beers Central, and Schwab's Gully, representing in the aggregate a capital of over 900,000*l.*, has been always good, but aggregate the other 10 companies, representing a capital of about 1,250,000*l.*, and we find that it never has been good, and as yet show no signs of improvement. The above four good companies are capable of paying under ordinary circumstances about 20 per cent. per annum, but the 10 unproductive companies cannot be worked altogether unless at a loss of 20 per cent. or even more. Now, Sir, this is either true or false, and if any of your contemporaries who deal so largely in invective can show that my estimate is not correct, I shall be pleased to acknowledge my error. Every person who has had much to do with mining knows that there are two kinds of mining—prospective and profitable—and that for profitable employment of capital there is no commercial enterprise so good as the latter, and the value of the property is regulated according to the amount of dividends paid, taken in connection with the reserves that are known to exist. In prospective mining persons enter into the matter as a mere speculation—a venture, in fact, and seldom or ever pay anything but a nominal price for their property, knowing from the commencement that they stand to lose all the money they place in the venture. Now, during the time of what has been fitly described the "company mania" in Kimberley there was no distinction made between profitable and prospective mining; every doubtful claim in every mine that was put into a company was placed before the public in the most glowing colours as a profitable source for investment; the result (which is the present deplorable state of affairs in Kimberley) never could have been doubtful. As I before remarked, the ground that was profitable then is profitable now, but the dividends from the good companies are utterly inadequate to meet the requirements of the bad, and as diamond mining is our only staple industry I see only one means of averting a collapse, and restoring the diamond fields to their original prosperity; and that is by amputating the diseased limb—i.e., winding-up all our questionable companies, reorganising all the middling, and properly conducting all those known to be rich.

The people of Kimberley months ago realised the fact that they had speculated far beyond their means, and many would in all probability have stopped in season if it were not for some of your contemporaries trumpeting, "Peace, peace, when there was no peace," and leading them to expect an influx of foreign capital, which never came. As a fact good companies have not sought foreign capital, are not seeking it, and are not likely to do so. I repeat as I have in previous letters, that it is only properties of doubtful character that are offered to foreign capitalists; and attempts on the part of some of your contemporaries to misrepresent or conceal this fact only induces some to live in a fool's paradise, to retard the progress of the diamond fields, and consequently the whole of South Africa. It is universally acknowledged here that my letters to the *Mining Journal* during the last eight or nine months has done much towards improving the position of many of our diamond mining companies. They have put a stop to the floating of questionable concerns; they have put the managers and directors of fairly good companies on their metal, and taught them that there are other things expected of competent managers besides drawing large salaries. In fact during the last six months there has been a decided improvement in most of our *bona fide* companies. It has struck me as somewhat strange that in a place where mining is the only staple industry, and where between 80 and 90 mines represent a capital of about 10,000,000*l.*, there should not be a single paper devoted entirely to the mining interest. With one exception the local papers seldom refer to mining matters unless it be when a good company declares a dividend.

I am pleased to notice that the principal writer in the South African, of the 11th and 18th ult., again refers me in his usual flattering terms. I would remind him of the old proverb that "A clear conscience laughs at false accusations." I believe that his friend Kitto has completed his four years examination of the mineral resources of this country, and is on his way to England, where I have no doubt he will be as ready to promote the interest of all good companies, as it is known he is ready to put his veto on the bad.

During the past week, with the exception of Otto's Kopje, the share market has been very dull. The prospects of this Kopje are certainly good; on Monday I saw over 80 carats of diamonds from there of really good quality, the largest stone weighing 27½ carats. The shares on which 15*l.* have been paid has changed hands at over 40*l.* At Kamfersdam they are paying expenses, and I believe some weeks they leave a small profit. Olifantsfontein is defunct, and because the late manager (who is a thoroughly honest young fellow) would not consent to find diamonds he is being subjected to no small amount of abuse. Koffyfontein is still idle, and Jagersfontein is almost idle. At the Bultfontein Mine the Alliance Company has suspended operations. This is a property which is capable of paying 20 per cent. per annum on their capital, but are compelled to close entirely through bad management. The French and Desterre is a good company, and with a rise in diamonds ought to pay fair dividends. The private company of Brodie, Wells, and Barker are working a poor layer, and are not finding so well as they were some weeks ago. At the Dutoitspan Mine several companies are still idle; the Britannia Diamond Mining Company is doing fairly well, and are finding some very fine diamonds.

In the Kimberley Mine there was a fall of reef on June 12 just over

the French Company's claims, but it did no damage. The five good companies in this mine are still doing very well. The Barnato is finding splendidly; I saw on Tuesday a fine 97 carat diamond found in the picking; the stuff in the wash is turning out equally good. The British is doing splendidly, and so is the Standard. I regret to learn that the French Company have not been floated in England; this is really a good company, and if the shares had been put in at 33*l.* as agreed upon, they would have paid under proper management 40 per cent. per annum. The Central Company may be fairly called the prize of South Africa; they are now working some of their best ground, and the boys are finding from 400 to 500 carats per day in breaking it with the pick. In my last I pointed out that the Central would have a reserve of blue on the floors by the end of this month worth 200,000*l.*; I was rather under than over the mark. The North-East Company is improving. The South-East and Rose Innis get occasional glimpses of their diamond soil, but they no sooner commence working on it than it is again buried with reef.

The electric light which was an unqualified success in Kimberley has met with such strong opposition from the Dutch that we are again in darkness; they say it is the result of magic, and object to anything that does not require snuffing. The waterworks are being pushed forward with an amount of energy which does credit to all concerned.

News from the Transvaal state that on the Queen's Birthday the Volksraad sat with closed doors for the purpose of discussing whether a royal salute should be fired by the State Artillery, or whether the British Resident should not provide his own. The banks and Government offices were kept open until noon, after which the Raad presented an address in the usual form. The Kaffirs somehow got the idea that the country had again been taken over by the English, and there was rejoicing accordingly. At the gold fields there is little or nothing doing; the diggers are merely shepherding their claims until money is sent from England to buy them out, the price having been already fixed. The Government through the British Resident have decided to treat Hampson and White's four claims at Waterfall as a special case, and consequently their rights are to be respected.

There is a report that a rich discovery of gold has been made at the Spelonken; but I regret to say that no reliance can be placed on any reports from the Transvaal referring to discoveries of mineral. The outrages by Boers on our northern border are rather too close to be pleasant. Many traders are moving to Danies Kuil for safety, having lost a large number of their cattle. The Boers stole 197 head of cattle last week from Mr. A. Reader. There was a report on June 12 that Gasibone had joined the Boers for the purpose of a combined attack on Mankorane. And yesterday, the 15th, there were rumours of the attack having taken place with a great slaughter of Mankorane's people. We are expecting fuller particulars hourly.

Kimberley, June 16.

CORRESPONDENT.

## MYSORE REEF'S GOLD MINING COMPANY.

SIR,—In my letter in last week's *Mining Journal* I find a most unfortunate misstatement. I have mentioned the 16 stamps as being capable of crushing 300 tons in 24 hours. This should have been 60 tons every 24 hours, or 300 tons a week, the days being multiplied by five, so as to leave abundance of margin that might be needed by accidents or inexperience of the men. Your insertion of this will greatly oblige.

Late Manager of the Mysore Reef's Gold Mining Company.

London, July 11.

## MINING IN NEW SOUTH WALES.

SIR,—The subjoined casual extracts from this day's Sydney papers will give those readers of the Journal interested in our mines a good general idea of them—although, as it happens, there is not much reference to quartz mining specially.

At Vegetable Creek, a mining expert from Sydney has been inspecting different properties about here during the past week. He speaks very highly of the lodes at the tableland and the Gulf; Brown's gully, at the Gulf, the property of Mr. Graney, being specially mentioned as one of the best properties in the district. Hart's Dutchman's, and Great Britain companies' lodes on the tableland are very favourably spoken of; also, Ottery's lode at Tent Hill.

From Inverell the report states that Moor Wenna Tin Mine looks splendid; over 40 tons of tin bagged. This is an alluvial tin working.

From Mudgee it is announced that an extensive silver country has been discovered in the county of Napier. Messrs. Brooke, Clarke, Cameron, Crossing, Miller, Wilton, and the Hon. G. H. Cox, all residents of Mudgee, are chiefly interested, and have secured a large quantity of land on which the discovery was made. The surface stone assayed gives 98 ozs. 19 dwts. 5 grs. silver, and 11 dwts. 8 grs. gold to the ton. Some of the stone since brought looks much better. This discovery is likely to prove an important one.

From Carcoar it is reported that in the Great Extended claim, situated at the Forest Reefs, the party are at present driving in a northerly direction, and are expecting to strike a gutter daily, the wash being about 18 in. thick at present. The prospects are up to 4 dwts. to the dish; they are at present only on the edge of the land, the present depth of shaft being 210 ft.

From Temora the escort took 2967 ozs. 6 grs.—viz., Bank of New South Wales, 1163 ozs. 17 dwts. 6 grs.; A. J. S. Bank, 1803 ozs. 3 dwts.

From Adelong, the escort took 737 ozs. 10 dwts. 16 grs.—Bank of New South Wales, 659 ozs. 16 dwts.; Commercial Bank, 67 ozs. 14 dwts. 16 grs. The Sovereign Gold Mining Company extended alluvial are on payable gold. Ryan and party have taken a lease of Nevada Creek, and there are good indications. Nester and party's extended quartz claim at Gibraltar Hill, Adelong, have fine prospects. Several leading claims are in the market.

All these reports are of yesterday's date. The mining manager of the Hidden Treasure Gold Mining Company, Copeland, per telegram, reports as follows:—"Reef back No. 3 tunnel improved, showing gold freely. The mining manager of the New Reform Gold Mining Company, under date Lucknow, May 23, reports:—"I have very much pleasure in reporting the discovery of the Industry Rewarded and Perseverance veins upon the 200-ft. in No. 1 shaft. I am now breaking down a large quantity of carbonates, containing fair samples of pyrites. The battery started to-day. The tramway is completed. The No. 2 shaft has been raised 20 ft., new poppet heads erected, and new wire-rope placed in the shaft. The guides are fixed in the east division, and one cage is ready. An extensive plat, 25 by 22, has been constructed on the level of the tramroad with the necessary flat sheets, &c. Men are going below to-morrow to construct plat at the 300 ft. level, after which work will be permanently resumed on the Uncle Tom vein, from which the previous company made all their splendid shipments of ore, &c. Upon the whole the mine is looking very well, and has been inspected by the local committee, who declare they are opinion that all the improvements are most permanent and creditable.

The history of the New Reform Gold Mining Company (mentioned above) may possibly be of interest to the proprietors of the Indian Gold Mines, and possibly give them courage to go on working and patience to wait for results. The Reform is one claim of about a dozen which were opened on the Wentworth Freehold Estate, near Orange, some 20 years back, at a time when both geologists and miners believed that gold only existed at shallow depths—say, from 100 to 200 ft. below the surface—and that if the reef ran out it was no good looking for it any deeper. The result was, that after taking out about 6 tons of free gold, at depths from 50 to 250 ft., and the reef becoming broken and a little water coming in, the whole line of working was abandoned, and the land reverted to sheep farming again, and, being a freehold, wandering diggers could not go on prospecting it, which, on abandoned Crown land leases, frequently leads to the re-discovery of lost lodes and reefs. Hence it lay idle for years. Then the discovery of heavy gold in Queensland by deeper sinking, and picking up the reef again at lower levels, gave one or two original shareholders the idea of also re-trying the Old Lucknow again—a small capital was raised, and work resumed in the special spot (or shaft) again, and after some little time the reef was found again, but more broken and mixed in with carbonates and serpentine rock, with much less free gold, but a good deal of pyrites. However, as the free gold paid well and gave dividends, the pyrites and mixed carbonate and serpentine rock were passed over for a time, till it struck the shareholders to



send some of it home on chance of its possibly fetching something, and it did fetch something, and more than a mere something, as several tons of it have gone as high as from 300 and (I think) up to 900 ozs. gold per ton. This led to more energetic working of course; and as the lode seems to strengthen with depth (and they are not much over 300 ft. even now) a Melbourne syndicate bought it up for 60,000l., part cash and part shares, and so far seem more than satisfied with their bargain, and as the Victorians do understand deep mining far better than we do, the owner of the freehold, with its 10 or 12 adjoining abandoned claims, all on the same lode, is very complacently watching them making his estate more valuable every foot they sink, especially as there is only a lease, so that the Reform reverts to the estate again in a few years.

It is almost, if not absolutely, a rule now (so far as our late work all through these colonies goes to prove it) that if reef gold exists at the surface it also exists at a depth, even though the reef may run out for 50 or 100 ft., or even more; therefore let the Indian mine-owner not be disheartened unduly, as if they can only find out if gold really was ever got on their claims, the chances are ten to one in their favour of again finding it deeper down, and probably richer and with a stronger lode than before. Let them also not be discouraged if the stone does not show any visible gold, as we have good payable reefs here where you cannot see a speck, and yet which yield  $\frac{1}{2}$  oz. per ton, which with a 3 ft. reef pays well. But then they must also get one or two good men from Victoria who know how to properly crush and skilfully save the gold afterwards, for as far as I can judge by reading the reports in your paper, the mines themselves are not so deficient in gold as the managers in real practical knowledge of how and when to look for it, and to save it when found.

Sydney, May 26.

R. D. A.

#### FRONTINO AND BOLIVIA MINING COMPANY.

SIR,—I am pleased to see that Mr. Thomas Baxter has called the attention of the shareholders of this company to the state of their affairs; otherwise they may soon be in the position of their predecessors—the New Granada Company—who had to wind-up. I recollect some years ago asking the opinion of Mr. Uriococha (since dead) who came from the district. His answer was that “the mines were very rich in gold, which the natives got out; but, unfortunately, when English companies tried to do the same they put more in.”

I have perused Mr. White's report, and must say I see very little in it, except the record of an enormous expenditure, which a few months of revolution would be quite sufficient to render nugatory. Why should expensive buildings have been erected, which at some future time may be pointed at as somebody's “folly”? If mud walls and the thatch of the country were not durable enough, surely galvanised iron would have been so with the advantage of being moveable if wanted in another position at some future time. Mr. White speaks of large reserves, and values them as if he were the first miner who can “see beyond his pick.” All I can say is, the yield of those reserves will have been proved when they have been passed through the mill; perhaps posterity will be able to give a reliable account of them.

The “Pocuné water” up to the present time seems to have had the effect of turning things upside down at the mines, and necessitated working upon poor ore, but this Mr. White should have foreseen, and not promised 2000l. a month extra, if he can, as he professes, “see beyond his pick.” If our dividends are to come out of “profit on exchange” would it not be best to let all our mines out on tribute? A dozen people would then be sufficient for our purposes instead of a thousand. What a valuable recruiting ground our mines must be when revolutions break out; where would Mr. White then hide “his experienced miners” he is so chary of discharging now? Really, if the matter were not serious, it would be almost laughable.

Ludgate-hill, July 11.

JOSIAH CHILD.

#### FRONTINO AND BOLIVIA MINING COMPANY (LIMITED).

SIR,—I apprehend that we must judge Mr. White by what he has done or is doing, and not with regard to his desire of doing all that is possible for the benefit of the company. We cannot judge a man's motives or desires, but his management we can; and unless the future management is altogether different to the past, the property is not, for beneficial purposes, of any more value than it was when Mr. White took possession. Of 184,000l. realised from the mines between April, 1879, and December, 1881, Mr. White has spent the whole (save a paltry 2000l.), besides 15,500l. raised by the issue of 5000 new shares in 1880 and 1881. The question is, what is the value of the property as a dividend-paying concern, because that is the real test of its worth; and I maintain, upon the results for the past, and Mr. White's promises for the future, that unless Mr. White can reduce his working expenses very materially beyond the 2l. per ton he speaks of, the company cannot be anything more than a very moderate success, especially having regard to the number of contingencies to which it is subject and the yield of  $\frac{1}{4}$  oz. per ton which Mr. White now puts it at. If, too, we are to be guided by past experience, the cost will certainly go beyond Mr. White's estimate (whatever that may be), whilst the average yield will be found below it.

Mr. White has accounted for the high cost hitherto of, say, 2l. 10s. per ton, on the ground of extra works of development, &c., alleging that for every ton of stuff taken away 2 tons have been left in reserve. If this is true, the developments are now such as to render this mode of working unnecessary in the future; and if this is so, are we to understand that Mr. White cannot reduce the working expenses under 2l. per ton, or four times as much as they used to be, and twice as much as they were in 1879, when Mr. White was in charge. It is of vital importance that there should be no extravagance on this head, and Mr. White should be required to justify anything like an expense of 2l. per ton—a sum which seems outrageous, and far beyond anything expended in any similar property, and Mr. White has yet to prove that he is entitled to the confidence of the shareholders in this respect. As to my figures in my letter to you of the 5th inst., their correctness is beyond dispute.

I maintain that Mr. White's reports are not to be relied on, and that the board have failed in their duty to the shareholders in neglecting to control and supervise Mr. White. As a further proof of this, Mr. White in his report for January, 1880, says—“I shall endeavour to keep unproductive work down to about 6000l. per month.” Yet what is the fact? From that time down to the end of April, 1882, his expenditure on capital account amounted to over 30,000l. As to 12,000l. (half of the new capital) I do not know, and no one does, I think, how far it is being applied for the specific purposes for which it was appropriated, but as the expenditure on capital account for the past four months amounts to about 5000l., it follows that if the same scale is continued the remaining 7000l. will be exhausted by the end of October, and by that time Mr. White will have spent on capital account since he took charge in April, 1879, the very large sum of 42,975l. in addition to the large expenditure, averaging about 2l. 10s. per ton, in working expenses. This 42,975l., too, is exclusive of the 12,000l. new capital set apart for the purchase and working of the Cordoba and Garabaldi Mines. Since 1880 the capital of the company on which dividend has to be paid has been increased 34,000l. (no small amount) by the issue of 17,000l. new shares. Then, again, what have we or what shall we have especially as regards productive works for this very large expenditure of 43,000l. said to have been spent on capital account. The board have never condescended to give us any idea as to how and for what this large sum has been expended, particularly as between productive and unproductive works, though, indeed, this is not to be wondered at, as I do not think they themselves had any clear idea, nor have they even exercised any judgment as to the mode in which the expenditure was being made.

Mr. White's present report in my judgment is visionary, and like his other reports and promises, all for the future, and leaves everything uncertain as to the past. The board, and Mr. White too, may make up their minds that the shareholders will neither find Mr. White more capital to squander, nor will they allow him, either under cover of working expenses or otherwise, to swallow up the profits. At any rate, I am determined not to do so for one, and from the end of 1881 they may make up their minds that the shareholders will insist upon having the profits made from the working of their mines

divided as dividends, and that the accounts will be carefully scrutinised to see that such profits are not covertly or otherwise applied for capital purposes as distinguished from proper working expenses.

I regret that the board have not invited two large shareholders to join them, a course which I think would have been wise, and it is what I still think they ought to do in the best interests of the shareholders. The confidence of a large portion of the shareholders is withdrawn from them as well as from Mr. White, and that of a large number of those who (as a matter of prudence) still support the board) is rudely shaken, and having regard to the patience the shareholders have shown, and the extravagant expenditure they have (unfortunately) so long tolerated, it is improbable that they can any longer have confidence either in the board or in Mr. White until the results which have been so long and so continuously promised them are realised.—July 10.

THOS. BAXTER.

#### FRONTINO AND BOLIVIA GOLD MINING COMPANY.

SIR,—I have been pleased to derive from two letters published in the Journal of Saturday many data which will make my way clear when I come to explain the position and prospects of the company. I am indebted to the writers for having shown me how my statements may be misconstrued, and I have every confidence in being able to satisfy the shareholders at the adjourned meeting to consider my report to be held on the 19th inst., without occupying your space with a discussion which would be premature.

London, July 13.

ROBERT B. WHITE.

#### FRONTINO AND BOLIVIA GOLD MINING COMPANY.

SIR,—Will you allow me to address the shareholders of this company through the medium of the *Mining Journal*, that I may draw attention to a few facts which I think are worthy of notice. I observe in the report of the meeting of June 28 that the number of shares said to have been represented by me amounting to 6156, and of those by the directors to 26,226. For these details your reporter must have been indebted to the directors or secretary, and obviously they were furnished for the purpose of showing what a large support the directors had over those acting with myself. They, however, do not represent the exact state of affairs, inasmuch as the number of shares supporting our policy amounted to upwards of 9800, but some of the shareholders failed to communicate with us in time for the meeting. Amongst those shareholders supporting the directors are some who individually hold a very large number of shares, and the proposal which I advocated at the meeting would have put into their pockets a dividend of  $\frac{7}{8}$  per cent. for the half-year ending Dec., 1881. The directors, by their report and accounts, admitted that this dividend had been earned, and that there was cash out of which it could be paid, yet these shareholders proposed not to receive it. From the directors' report it appears that Mr. White, the manager, had given to them and to many of the principal shareholders, explanations which had not been offered to all, and I think it was due to the shareholders generally that they should have been informed when and where those explanations were given, what they were, and how and why they came to be offered to a few of the shareholders only. It has been admitted now for some time past that the board is divided on the policy of expenditure which for so long a time has been carried on to the utter ruin or loss of dividends, and it is also well known that but for this expenditure dividends might have been regularly paid.

Knowing this and taking into account all the risks to which mining enterprise was and is subject, the Chairman promised that dividends should be paid every three months. Again, in February last, when the shareholders perceiving that the profits made in the June, 1881, half year had been spent on capital account, instead of being distributed as dividend, complained thereof, and reminded the Chairman of the promise of quarterly dividends. Mr. Foakes then renewed his promise by stating that all the earnings since June should be distributed as dividend; yet at the meeting on June 28 the shareholders were again asked to relinquish their claim to the previous half-year's earnings and to accept in place thereof a paltry, miserable, distribution of 1s. per share for the three months from January to March of the present year, which, by the way, is a period the meeting was not called upon to consider, and the accounts for which was not under consideration. It may be that the monthly accounts for January, February, and March showed a profit out of which this dividend could be paid, but the report for April, which the directors must have in their pockets at the time, showed a loss of 424,16s., and this was kept back from the meeting. I should be glad to know whether the principal shareholders who had regarded Mr. White's explanation as satisfactory had also seen the report for April, or heard how it was likely to turn out. Again, be it observed, this dividend of 1s. per share is to be paid on July 22, but the shareholders meantime receive notice of a call, with a polite intimation that unless the call be paid in full a week before they are not to have their dividend, but only half of it. What is the meaning of this call being made just after the meeting instead of before, and of its being made payable a week before the time fixed for the payment of the dividend? Can it be said that on June 28 the directors did not know that the call was necessary? That can hardly be the case, for the meeting was held on Wednesday, and the notice of call sent out on the following Tuesday. Then why did not Mr. Foakes candidly inform the shareholders that the call was required? Again, what is the money required for? not a word of explanation accompanies the notice; nothing is to be found in the last half-yearly report or accounts from which the directors could judge that the call would be required, and, as already intimated, Mr. Foakes, although he addressed the meeting as usual at great length, carefully kept the fact of the call being intended to himself.

With regard to the division at the board, one would have thought that if the difference of opinion was an honest one, relating solely to the policy to be pursued on behalf of the company, the directors would have been glad of the assistance of one or two additional members to serve with them, but although shareholders holding upwards of 13,000 shares have expressed a desire that one or two other gentlemen should join the board the Chairman has positively refused to acquiesce in that suggestion. The recent communications addressed to the *Mining Journal* by Mr. Baxter and others contain also much detail upon which no satisfactory explanation has yet been given.

If shareholders, whether large or small, can in the face of past promises made and broken, coupled with the facts to which I have now drawn attention, still feel satisfied that the affairs of this company are in good hands, I am sorry to say that I do not share that feeling with them. As to the large shareholders who so persistently elect not to have a dividend declared, I hope the time will come when they will favour their brother shareholders with their reasons for so acting. At present the subject is enveloped in mystery, and I venture to predict that so long as Mr. Foakes remains in the position of power which he at present enjoys, the shareholders of the Frontino need not look for, and must not expect any, satisfaction to themselves.—*Serjeant's Inn, July 13.*

S. S. SEAL.

#### THE ALMADA AND TRITO MINE.

SIR,—It is a great mistake to suppose that the value of the 4 tons 11 cwt. 1 qr. 21 lbs. 5 ozs. of silver raised by this company in the first four months of this year is about 70,000l. I wish that was the value. One ton of silver at 52d. per ounce, the price at which the last remittance of silver was sold, will realise 5824l., and therefore 4 tons 11 cwt. 1 qr. 21 lbs. 5 ozs. will realise 26,627l., and not 70,000l., as erroneously stated. The figures as to quantity require looking into, as it is hinted that they appear apocryphal. I can only say the Chairman, in his speech at the meeting held on June 30, stated the quantity of silver raised in the four months referred to was 122,897 ozs., which is equal to the quantity stated—4 tons 11 cwt. 1 qr. 21 lbs. 5 ozs. I believe with the Chairman, that “no silver mine owned in this country is raising more silver than Almada, unless the Richmond is doing so, and that is doubtful.”

The profit already made by Almada for five months this year will pay off the debt against the revenue account which has accumulated during the past three or four years, the year's interest on the debenture

debt and the London office expenses leaving the profit for the remaining seven months available for dividends. Mr. Clewes, the manager, stated that the reserves in sight still were more than equal to a year's supply of ore for the mill, notwithstanding that since the discovery of the ore body upwards of \$330,000 in silver had been extracted from it.—*City, July 14.*

ALPHA.

#### THE ORGANOS GOLD MINES.

SIR,—It has recently come to my notice that parties recommending the shares of this company have been making extensive use of a table or calculation, taken from one of my investment circulars, of the results to be obtained from working the mines. This table has been made use of without the context which explains its nature, and I have hence been charged by many friends and clients, who have recognised it, with being much too sanguine to be altogether reliable. I think it is due to myself to ask you to insert this letter with the table, &c., in your valuable Journal, as it was first published by me. This was as follows:—

The possible result of working the Mine is shown in the following table. It may be mentioned that a yield of  $\frac{3}{4}$  oz. of gold per ton is the rate upon which the directors based their prospectus;  $\frac{1}{4}$  oz. per ton is the average rate of gold extracted with the aid of old and imperfect appliances by Mr. Williamson from 20 tons of quartz, while  $\frac{2}{4}$  ozs. and 5 ozs. of gold per ton represent the assays recently made under the superintendence of Mr. Green, the manager:—

Average yield of gold per ton of quartz.	Total annual yield from crushing, 50 tons per day, say, 12,500 tons.	Value of same at £3 17s. 6d. per oz.	Annual profit reckoning cost at 25s. per ton.	Dividend per share.	Value of shares at 7 years' purchase.
ozs.	ozs.	£ s. d.	£ s. d.	£ s. d.	£ s. d.
$\frac{3}{4}$	9,375	36,328 2 6	20,703 2 6	1 7 6	9 12 6
$\frac{1}{4}$	18,750	72,656 5 0	56,031 5 0	3 14 6	25 1 6
$\frac{2}{4}$	31,250	121,093 15 0	105,468 15 0	7 0 6	49 3 6
5	62,500	242,187 10 0	226,362 10 0	15 2 0	105 14 0

In giving these figures I would repeat that I do not wish my clients and readers to believe that the Organos is yet anything but a speculation. My object is merely to enforce my opinion that the company is a speculation of the most legitimate character, offering, if successful, prospects which are not to be found in connection with any other enterprise of a similar nature, and now before the public.

The reports coming to hand from the Organos cannot leave any doubt that those mines will prove exceedingly productive, and that the shares are intrinsically worth considerably more than present prices. I am afraid, however, that in publishing the above table without the subsequent qualification there would be much ground for the charge made against me that in this case at least I am somewhat too sanguine.—*St. Swinith's-lane, July 13.*

THOMAS THOMPSON

#### THE TIN TRADE.

SIR,—When addressing you on June 8 I called attention to the fact that a *fictitious* scarcity of tin in London was being created by a most unusual and extraordinary detention of shipments. The total of these short shipments (which must sooner or later arrive) amounts to 3340 tons for the quarter, and the position has thus become so *ridiculously* apparent that it becomes unnecessary to offer any further explanations than will be afforded by the following figures:—

	Shipped for London.	U.S.A.	Total.
Quarterly average, 1881...	3786	1413	5199
January, 1882 .....	875	1150	2025
February .....	1525	425	1950
March .....	1400	950	2350
Total tons .....	3800	2525	6325
April, 1882 .....	675	450	1125
May .....	500	610	1110
June .....	450	300	750
Total tons .....	1625	1360	2985

CYMR.

#### MINING ENTERPRISE IN BRAZIL.

SIR,—If the writer of the fourth article on “Where shall we obtain our gold” should attempt to palm off such facts (?) as we see over his name, in California, he would be told, if his effusions were noticed at all, to “dry up.” If he will read Burton's Highlands of Brazil and then write about the mining country he may find some information to aid in making history. It is, however, new history to learn that the section visited by Mr. Del Mar covers the principal auriferous districts of Brazil. It has been generally supposed by the people of Brazil and others—perhaps less eminent men, but old travellers and workers—that the province of Minas Geraes, or General Mines, covered the heart of the mining country, and indeed the Emperor must have been advised that such was the case when five years ago he founded here at Ouro Preto the School of Mines, and engaged the best talent that could be procured in France for its management. Within a circuit of 50 miles from this city more than 50 quartz mines are now and when Mr. Del Mar visited this country being worked. A French Syndicate are working at four places in all, employing 370 men. They have two quartz mills at work. At one of their mines 156 tons of ore, the first crushing, gave nearly 2 ozs. per ton; 16 oits, worth 6l. 16s. per ton. The ore was not picked. All was milled as it came from the mine. At another of their mines, where as yet no mill is ready, a very large body of ore has been opened, and the mine to-day can give work for 50 stamps. Small mills are at work in every direction about the central part of this province, and the real work of deep mining has just begun. Mr. Del Mar has heard of but one place where amalgamation with mercury had been tried. I have seen 20 places where it is in use, and I have not travelled to find “where we shall obtain more gold.” Coming from a country where 4,000,000l. sterling have been spent to bring water on mining ground, he writes of the difficulty of obtaining a water supply here, where ditches of more than six miles in length would rarely be needed to give an abundant supply of water for most of the mines.

Mr. Del Mar speaks of an English company working 300 men who are unlawfully held in slavery at or near Morro Velho. He means the St. John del Rey Company, and his modern history is as weak as his ancient. The company own very few slaves, and they are not held unlawfully. Mr. Del Mar says—“here and there some isolated negro is panning ‘flour gold,’ and gaining thereby about 8d. per day.” I say men are sent up from Rio to travel through the country and buy gold of the washers of streams and of the merchants who supply the isolated negro. I have picked up in the course of a month of first hands 12 kilos, or 25 lbs. of gold, and sold my stock in London once, at other times in Paris, and I am not in the business. It did as a profit could be made, carrying it myself. Mr. Del Mar says—“My own investigations show that Brazil contains numerous auriferous quartz veins and killas extending over a vast range of country.” I shall expose such nonsense as this whenever I see it. Mr. Del Mar left Europe very late in November last year—I think I am right—and returned in a very short time, and now tells of his investigation extending over a vast range of country. He has not reported upon facts correctly, of which he could have been fully informed in London. If other information on mining in the numerous books as noted in his autobiography is written up in the way he has done Brazil it is not worth much, in fact it is simply misleading.

I think Mr. Del Mar will bring Holcomb Valley, California, and the varnished samples to the front soon. Mr. Editor—You are aware that I have been “pitched into” for my truthful statements concerning affairs of mines in this country. I regret that it has not been within my province to “bull” certain undertakings going on here. It was openly given out that I should be driven away from this country, and that all who were in any way antagonistic to a strong rich company located here should be suppressed. Our lives are not all cast in pleasant places. It suited me to stay. Circumstances make it desirable that I should do so. Pride has had her fall, and opposition is weakened. I shall combat on truthful grounds, Del Mar, Elephant stamps, and any deceptions on Brazil that I may discover. The history of English companies is not the true history of any mining camp or country. Mr. Del Mar says that he made his personal and very extensive examination of the district which he visited in Brazil during the year 1881. He was in France and



England during the summer of 1881, and in November also. I leave it for you to estimate on the time he had to examine a country three weeks travel from the nearest point in England or France. If such plagiarism as his history of the mining region of Brazil and his deductions will pass as a fact with your readers I have nothing to say. "Where shall we obtain more gold?" I am not an M.E. I have not blossomed out yet as I see certain others have. I do not travel over the mining countries to tell the dear public gratuitously where and when it is best to invest, but I have travelled much in California, Colorado, Utah, Arizona, Canada, and Brazil, and I say we shall obtain more gold in the United States, in Australia, Brazil, Venezuela, and in other mining countries if we work for it. I do not expect money or notoriety for this opinion. I might add very often more gold is found by stopping in London.

Ouro Preto, June 12.

MINAS, E.A.\*

\* Which being interpreted means—Expert Adviser.

#### DAVID THOMAS.

SIR,—Enclosed please find copy of resolutions of our Exchange relative to Mr. David Thomas, which may be of interest to you for publication.

WM. ALLEN SMITH, Assistant Secretary.

Iron and Metal Exchange Company, New York, June 30.

The Associates of the Iron and Metal Exchange Company at a meeting held June 28, adopted the following:—

Resolved,—That the directors be respectfully requested to enter in the records of the Company the following:—

#### IN MEMORIAM.

DAVID THOMAS, who departed this life on June 20, may be called the Father of the Iron Manufacture of the United States. He came to this country to make it his home at a time when the then known coal fields of the country were not believed to be capable of furnishing fuel adapted to the reduction of iron ores, and by his individual skill, perseverance, and energy demonstrated that the fuel from these same coal fields is exceedingly well adapted to the purpose. The benefits which this country have derived from his success in that direction are incalculable. It laid the foundation upon which has been built the great iron industries of the whole country. His well-spent life, in its exhibition of industry and wisely directed and unwavering determination to overcome obstacles, may well be taken as a model for the working man, and in its gentleness of manner, kindness of disposition, warmth of affection, unswerving integrity, devotion to every good cause, and adherence to the loftiest Christian principles may well be taken as a model for any man. The great success he attained as a manufacturer, which enabled him to enjoy a serene and ripe old age, with the large results of his life work spread out before him, was due in no sense to fortuitous circumstances, but altogether to the qualities of the man. The members of the Iron and Metal Exchange, with a consciousness of the obligation they are under to David Thomas, desire to record their respect for his memory and their reverence for his name; and while they sympathize with the members of his family in the grief which comes with his loss, they congratulate them that they have the right to cherish in their memories the grand manhood which characterised their honoured head.

JAMES B. BRINSMADE, W. E. DODGE, JUNR.  
B. F. JUDSON, B. G. CLARKE,  
JAMES A. BURDEN, GEO. A. CROCKER, } Committee.

#### COAL IN THE EAST OF YORKS IRE.

SIR,—As considerable interest gathers around the progress of the boring now being made near Goole, down to the coal measures, it may not be wrong, in view of the ultimate success of the experiment, to refer to my own examination of that district seven years ago. In May, 1875, I had the honour of conducting an enquiry, first as to the probable continuation of the coal measures to the south and east of the town of Goole, and secondly, the question of their probable depth. By a comparison of the results of borings and sinkings east, south, and south-east, with the strata as seen in rock and pit sections to the west, I give it as my opinion that at a point a little to the south-west of Goole the Barnsley coal would be reached at a depth of about 600 yards from the surface. It was with great pleasure therefore that I read in last week's Journal of the indications of the proximity of the coal measures which the boring at present affords.

Goboven, Ousevaly, July 11.

D. C. DAVIES, F.G.S.

#### TIN MINING IN THE ST. BLAZEY DISTRICT.

SIR,—The starting of a stamping and pumping-engine in Fowey Consols took place on July 6. Although the present company has only been working a few months in this undertaking a 36 in. engine for stamping and pumping purposes has been erected and started under the superintendence of Mr. West, of the St. Blazey Ironworks. On the occasion several of the principal inhabitants of the neighbourhood were present. The starting of this engine with the important discovery of tin is looked on as the pioneer of a revival of mining in this neighbourhood, which was once so famed for its riches, it being in the sett of Old Fowey Consols, where tin was not sought after, but copper in abundance. Although in this undertaking so far only one lode has been worked on, considerable quantities of tin has been discovered and taken away, and reserves, as stated by the manager, already visible underground sufficient to keep the stamps working for 12 months. The tin is of good quality, the strata all that can be desired, and nearing the granite junction. The manager, as he makes progress in depth (I am informed) intends driving a cross-cut south, where he intends and will no doubt cut the principal lodes of Fowey Consols, where quantities of tin was broken in the deep levels to the west of the copper, but not then recognised. From the position of this sett, with so many rich lodes running through it in this mineral district, it may be considered that this enterprising company has a very valuable property, and in every probability be well remunerated for their outlay. With such unusual facilities—as it is only a little over a mile from the port of Par, and skirted by the Cornwall Minerals Railway, which can be made applicable for any purpose required—it is hoped that other mining capitalists will come into this district, as there is plenty of mineral ground to the west of this if only opened up.

Par Station, July 12.

A WELL WISHER.

#### MULBERRY TIN WORK.

SIR,—A friend of mine, who holds an interest in Mulberry Tin Mine, or Work, offered me the opportunity of a ride with him to see this extraordinary property, which is situated in the parish of Lanivet, about four miles west of Bodmin. It is in the land of Lord Roberts and others. The origin of the working dates back about 200 years. The ancients commenced the work by sinking shafts on the narrow veins of tin which they discovered near the surface; but modern workers have found that the right mode of development is by open quarrying, because the veins are too small to be followed singly or by tunnelling, according to the ordinary practice of mining on lodes. The rock or country is clay-slate, in which tin is deposited in thin veins so numerous that to attempt to separate the tinstone from the debris, before reduction by the stamping mill, would be waste of time, and, consequently, of money. So the present workers, as their immediate predecessors did, reduce the whole for metallurgical treatment. The average of tin ore in the stone is about 7 lbs. per ton of stuff, which, with tin ore at about 50% per ton, or under, will yield a fair profit to the shareholders, and at the present price considerable profit, after all the arrangements for stamping, &c., are complete.

The open quarry is the largest excavation in the county except Delabole Slate Quarry and Carclaze Tin and China-Clay Pit. It is situated in an acclivity about 70 or 80 fathoms above the bottom of Withiel Valley, at the west. For the economical discharge of the stone from the pit two tunnels were successively cut—the first 500 yards in length, being about 20 fathoms deep at the pit's side, and the second 600 yards in length, being 40 fathoms deep at the pit. In each of these tunnels is a tramway for the conveyance of the tinstone to the stamping mills. The top tunnel tramway discharges the tinstone at a steam stamping-mill of 30 inches cylinder, now being

set in order for lifting 64 heads, and also to a water-wheel stamps of 36 heads, a little below the engine. The wheel is 60 feet in diameter. At present, for want of sufficient water, only 16 heads are at work.

Over the deep tunnel tramway, which is about one-third of a mile in length, is conveyed tinstone to two water stamping mills, having wheels respectively of 18 ft. diameter and 6 ft. wide, one lifting 32 iron lifters, and the other 36 wooden lifters. Here there are the usual dressing appliances, managed by John Hawke, a man of long experience in metallurgy, who has been there 24 years. The place is known by the name of Cork. At a place called Little Mill there is a water-wheel 12 ft. diameter and 6 ft. breast, lifting eight heads, making in all on the work 166 heads. I am told that the company intend to enlarge the stamping power to 1000 heads, an unparalleled stamping force, but warranted by the reserves of tinstone, to exhaust which will, I believe, require several centuries of active operations. The area of the ground containing tinstone is said to be about a mile square, and has been described as a hill of tin, and the quality of the stone improves as depth is attained. I do not know any other piece of stanniferous ground comparable with this. The length of the excavation is about 1 furlong, and its width about 1 chain on an average; depth at the mouth of the deep tunnel 40 fms. By driving another tunnel from the bottom of the valley another 40 fms. may be obtained, making 80 fms. in all. The great attraction of this property is its exemption from the speculative element. There is no risk attached to it but the variable price of tin, which is not likely to descend to a non-profitable standard. In this respect it is preferable to mining on lodes, where in general less certainty may be said to exist of profitable production. Here profits almost regular in amount may be regarded as certain soon after all the appliances are in working order. Capt. D. Cock, of Roche, is the manager, who has here introduced his friends to a valuable property. R. SYMONS.

Truro, July 8.

#### THE PROFITS OF A MINE, AND THEIR APPLICATION.

SIR,—It may, I think, be fairly said that our county of Cornwall is not behind any of the other counties in England in its contribution of distinguished men. I will mention some of them. Of antiquarians we had Dr. Borlase, whose worthy representative we have now in Mr. W. Copeland Borlase, M.P., the rising statesman; of historians (amongst others), we had Tonkin, Hals, Carew, two Gilberts, Polwhele, and Drew, the metaphysician; of chemists, Sir Humphry Davy, late President of the Royal Society, Mr. Robert Hunt, and others; of mathematicians and astronomers we have an Adams; of painters we had an Opie; of Christian missionaries we had the learned and pious Rev. Henry Martyn, who knew eight languages; of civil and constructive engineers we had Trevithick (the inventor of the locomotive engine), Woolf, Sims, West, Hocking and Loam, Harvey and Company, Dingey (of Truro), and Mr. F. W. Michell (of Redruth), the fourth of his family in that department of labour; of geologists Dr. Boase, Messrs. W. J. Henwood, Collins, Hunt, Whitley, and others; of poets Wolcott, Stokes, Daniell, and Harris; of statuary a Burnard (the executor of the Lander column in this city); of statesmen the Earl of Chatham; of eminent physicians Dr. Carlyn and others; of architects we have a Trevail, who is capable of designing any structure from a cottage to a cathedral; and for physical force, misapplied, we had a Polkinghorne, the champion wrestler with Cann the Devonian in 1826.

The subject of this paper was not distinguished in the literary world; but in another department he stands out more prominently, I believe, than any individual of this or the preceding century—I mean as the executor, unaided, of works of costly magnitude, and of great utility.

Mr. Joseph Thomas Austen, of Place House, Fowey, a descendant of an ancient family (whose mother's maiden name was Treffry) took the name of Treffry about 35 years ago. He died in the year 1850, aged 68 years. His mother died about the year 1848, aged 92. Mr. Treffry was never married. It has been said that he did not like the society of the fair sex, and that he was not at ease when in their company—in this respect he was very different from gentlemen in general, who are their great admirers. Dr. Adam Clarke said that he believed it to be the duty of every son of Adam to take a daughter of Eve—a dictum certainly not universally accepted. The first of Mr. Treffry's great undertakings was the working of Fowey Consols Mines, in the parish of Tywardreath, in which he held three-fourths of the shares. It was set to work in or about the year 1813, and was profitable for nearly half a century—the total profits being about 250,000l. After all the pumping and other steam engines were at work on the mine he conceived the idea of introducing water to supersede steam as the motive power; and he proposed to his co-adventurers the making a lead to convey the water from the Luxulyan river at a point about two miles above Pont's Mill to the mine. They laughed at the proposition, declined to accede to it, and called him a madman. He said—"Well, if you don't approve of it I will do it at my own expense;" and so he did, and when it was completed and applied to all the intended purposes he charged the company the same amount monthly as the previous cost of working the steam-engines. I am informed that in two years he was reimbursed by such rent of all his outlay in the construction of the lead. Thereafter he charged the company only 100l. per month, which was paid so long as the mine was worked. The water is now rented from Mr. Kendall, the landowner (to whom Mr. Treffry, as lessee, always paid a small rent at 32½ per annum by the West of England China-clay and Stone Company. To conduct this water to the mine he had to cut through granite rock most of the distance, particularly at the Camers, a picturesque wooded elevation one mile north of St. Blazey. The deepest perpendicular shaft in Cornwall is one in Fowey Consols—344 fathoms. Many shafts are deeper, but not perpendicular for that extent. The next undertaking was a quay at Merthen Point, Par, of considerable length, which he constructed also at his own expense, which was very heavy. Since the erection of the numerous wharves at Par this quay has been little used; but it serves now as a breakwater.

The Fowey Consols Company were paying 7s. per ton for the conveyance of their produce to Fowey for shipment and for the supplies to the mines. To reduce that expense Mr. Treffry constructed a canal from Par to Pont's Mill with two locks (one at Par and the other at St. Blazey Bridge) for the conveyance of ores and other goods from and to the mines; length of it two miles. This was connected with the mines by a tramway and incline. At first he charged the company the same as they had been paying before for cartage, and in two or three years he was thereby reimbursed all his outlay. He thereupon reduced the charge to 4s. 6d. per ton. When the operations at the mine ceased the canal was of no further use, and it is now being silted up.

About the year 1829 Mr. Treffry commenced the construction of a railway from Par to Newquay, but he was, I believe, stopped at Bugle, in Roche, by the trustees of the turnpike-road, who would not consent to a level crossing. He had no Act of Parliament for the railway, but he had no difficulty with the landowners, except with one small lessee. It was not extended beyond that point until the Cornwall Minerals Railway Company took in hand the construction of their railway. But meanwhile Mr. Treffry had constructed a railway from St. Dennis to Newquay, and also a railway from East Wheal Rose to Newquay, so that to complete the connection between Par and Newquay the Minerals Company, after having agreed with Treffry's trustees, had merely to make the line from Bugle to the St. Dennis Junction, near the Indian Queens. To avoid the incline at the Camers in Luxulyan, the Minerals Company had to divert the line from half a mile below Pont's Mill to Bridges—a distance of two and a quarter miles. Inclination 1 in 40. Also to avoid the expense of enlarging the tunnel near Indian Queens they had to make a new curved railway north of it, increasing the distance one-third of a mile. The inclined plane in Luxulyan Valley is about half a mile in length—the summit being about 250 ft. above the valley. From the top of that incline the old line to Bridges is nearly level, being conveyed over the Luxulyan Valley by a substantial granite viaduct about 100 ft. high, which remains as a monument of the energy and engineering talent of Mr. Treffry. The viaduct also served as an aqueduct (and does so still) for conveying water descending from Bridges to a 30 ft. wheel at the top of the incline, which

was used to draw up the wagons from the bottom, which water, immediately after passing over the wheel, joins the lead to Fowey Consols. The incline and old railway to Bridges are disused.

In the year 1835 Mr. Treffry took a lease of Par Consols Mine, St. Blazey. He presented a few shares to his friends, on whom no call for money was made before a rich lode was cut in the adit. The mine yielded a profit of about 250,000l. In my Observations on Cornish Mines in 1865 I said—"The profit here has been considerable; but latterly there has been a small monthly loss in consequence of the low price of tin." In 1864 the returns were 28,099l. The mine was abandoned in the year 1868. Mr. Treffry's trustee sold his interest in the mine about 20 years ago for about 100,000l., which was applied to the reduction of his mortgage liabilities, for in carrying out so many gigantic works he had occasion to borrow a considerable sum. The sale of the Par and Newquay, St. Dennis and East Wheal Rose railways to the Cornwall Minerals Railway for another 100,000l. or more freed the estate from debt and trusteeship, and paid off the legatees under the will about four years ago.

West Fowey Consols, contiguous to Par Consols—commenced in 1839—was another of Mr. Treffry's mines, in which he held the major part. In this he was not so fortunate, the dividends being small, and on the whole working there was a loss. It was abandoned about 20 years ago, and the sett added to Par Consols second lease of 21 years. The whole is now in the hands of Capt. David Cock, of Roche, who is about to re-work it. Prideaux Wood, near St. Blazey, was another of Mr. Treffry's mines, which ceased to work in the year 1864. No profit was derived therefrom. The works were comparatively limited.

Mr. Treffry had porphyry works in Luxulyan. He or his trustee prepared the Wellington sarcophagus by steam-power. He made several tables out of that kind of stone, and presented them to her Majesty Queen Victoria after her visit in 1846. He had also extensive granite works in Lanlivery and St. Dennis, and silver-lead smelting works at Par, where there is a stack of 265 ft. high from the base, which base contains 1000 tons of granite—the superstructure is of brick. The stack is a creditable specimen of local talent. The offices which Mr. Treffry erected at Par are still in use—situated close by the wharves where an extensive business is carried on in coal and other commodities; but especially in the shipment of china-clay, china stone, and granite.

The undertaking by Sir H. Middleton to bring water into London by the New River was regarded as a wonderful thing; but it is small I think when compared with all the works of Mr. Treffry, which involved the outlay of probably nearly one million sterling. His rule was to apply all his income to the works he had in hand. He was wont to go to Fowey Consols, and get every month a computation of the profits for the current month, which the agents would give him. Looking at the amount he would say "three-quarters of that is mine;" whereupon he would direct works to be done to take all his share of profit. He used to say "I don't want to make money—I wish only to leave enough to bury me." His house at Place, Fowey, is beautifully ornamented with polished stones, which cost him probably thousands of pounds. When our Queen visited Place, in 1846, she expressed her admiration of it.

Mr. Treffry purchased Newquay about 40 years ago very cheaply having employed a poor man to bid in the auction, the competitors supposing that he could not pay the required deposit. When Mr. Treffry's name was given as the purchaser they were surprised. From that time till now Newquay has been undergoing improvement and enlargement, and is now a favourite watering-place, and having a connection with the Great Western Railway system it is a place much resorted to, and will probably become a large town.

Mr. Treffry was connected with sundry other mines, and works—so I am told—but of them I have no knowledge. He bequeathed his landed estates and all his other property to the Rev. Edward John Wilcock, who ten years after, by direction of the testator, took the name of Treffry, and afterwards obtained the degree of LL.D. The acting trustee and executor under Mr. Treffry's will was Mr. Jas. H. Meredith. Dr. Treffry died about two years ago, leaving the property to Mr. Charles Treffry, his son. The income from the whole estate is said to be from 8000l. to 10,000l. per annum. He has land in Fowey, Withiel, and near Doublebois.

Mr. J. T. Treffry was the first Chairman of the Cornwall Railway, appointed in the year 1844 or 1845. At the same time Mr. William Tweedy was appointed deputy-Chairman. Upon Mr. Treffry's death in 1850 the late Mr. Michael Williams was appointed his successor, who dying about the year 1858 was succeeded by Mr. Wm. Tweedy, who died in 1859, when Dr. Geo. Smith was appointed his successor; he resigned about the year 1868, whereupon the late Mr. W. Carne was appointed, and on his decease, six months after, the present Chairman, Mr. R. Tweedy, was appointed to that office.

You will perceive from this brief statement that Mr. Treffry was a successful speculator, and a man of singular energy, but if Fowey Consols instead of being a productive mine had turned out otherwise the great works which he accomplished would not have been known, but having been accomplished his memory will remain coeval with the granite blocks which constitute the viaduct in Luxulyan Valley.—Truro, July 6.

R. SYMONS.

P.S.—Since writing the above I have heard that all the property at Par has been sold to some gentlemen at St. Austell for 40,000l.

#### ROCKS TIN MINE.

SIR,—Amongst the numerous mines started about 18 months or two years ago was the Rocks Tin Mine, in the parish of St. Austell. Having some business to transact in the neighbourhood to-day I availed myself of the opportunity of visiting this mine, in order to see how far the favourable reports respecting it were likely to be verified by the results. I am given to understand that the mine is held by a few shareholders, and is not a marketable property, as most of the Cornish mines are, but was taken up as an investment merely. I am glad to inform all those interested in the property that the quantity of tinstone already discovered is abundant, and sufficient for the supply for two years of more stamp heads than those employed in any mine in Cornwall. Since my former visit to the mine a 36-in. cylinder stamping-engine has been erected, which at present is lifting 44 heads 10 hours per day. It will be worked by night also as soon as the stone-breaker, now under construction, has been completed for reducing the blocks of tin stone to the proper size for the stamps, a work now manually performed. There are five stamp axles on the ground ready to be erected for lifting 64 additional heads, making a total of 108. I had three samples of pulverised tin taken from one of the drags, as they are called—i.e., near its egress from the stamps, and I found the produce very good, think richer than that ordinarily found in mines.

The mechanical arrangements for the dressing of the reduced tinstone are of the newest and most approved character, and exhibit the intelligence of the manager in his instructions to the operatives. In a short time tin ore will be ready for the smelters, and there will be a progressive increase in the returns as the appliances are advanced. The old Rocks lode, in an open cutting in the hill, is yielding tinstone of fair quality, and the quantity is practically unlimited; its width is about 40 ft. A tramway is constructed for the transit of the tinstone thence to the stamps. A cross-cut from a clay pit east of the engine-shaft has intersected a good tin lode 4 ft. wide before unknown. A cross-cut will shortly be commenced at a deeper level to intersect the other lodes said to be standing whole between the main lode and old Rocks lode in virgin ground. The engine-shaft is 35 fms. deep, at which level, as well as in the upper levels, the lode maintains its good character. The pumping-engine is a 50-inch one, and drains the mine by four strokes per minute; it is in good working order. The magazine for the explosives is a very secure structure for its purpose, every care being taken to avert accident. Considering the large amount of work accomplished since the starting of the pumping-engine, Capt. D. Cock and the resident agents deserve commendation for the dispatch of it. Regarding the quantity and quality of the tinstone at command no doubt can be reasonably entertained as to the paying character of the concern, and I congratulate the shareholders on their prospects of an early realisation of profits.

Carnsmerry section of the company's property is also likely to be



a success, having the Rocks main lode and other good lodes passing through the sett. Here is an engine-house nearly ready to receive a 30 in. engine for pumping and stamping. The engine-shaft is sunk 10 fms.; lode in the bottom of the shaft 5 ft. wide, producing good tinstone. The main lode has been exposed at sundry points for half a mile east of shaft, and is productive at each point.

I am gratified to find that the report which I gave last year on both Rocks and Carnsmerry, and those given by Capt. Josiah Thomas and other intelligent agents, are justified by the experience of the present time. I consider Capt. Cock as the benefactor of the Roche district, because of the employment which his mining and other undertakings have afforded to the labouring and other classes. All his works are likely to be remunerative to all those who have joined him in raising the capital for carrying them on towards a successful issue, so that the investors as well as the labourers will be benefited by the productive works so undertaken.

R. SYMONS.  
Truro, July 6.

#### REPORT FROM CORNWALL.

July 13.—There certainly ought to be no doubt now about the prospects of the immediate future. When the smelters steadily advance the tin standards 2s. after 2s. it shows that they at least have confidence in the market, for if there is one point more than another that they are now noted for it is caution, nor do we wonder at it. When anything is the subject of so much speculative operation as tin has been of late wariness is a necessity. It has been a matter of some surprise that there has not been more activity in mining shares, but we do not see so much to wonder at in this. For one thing there are still several disturbing elements about. The complications in the East have some effect, the unsatisfactory results of some recent mine meetings have also theirs, and now we are threatened with a series of "revelations respecting Cornish mining," as it is delicately phrased. Add to this that most of the substantial "bals" kept up their prices fairly well, despite the reaction, and all is explained. The advance in the share market may be delayed, but it will come, and some of the forthcoming accounts—notably East Pool and Dolcoath—are likely materially to help it.

Of course it is not our business, nor would it be in accordance either with legal etiquette or justice, to comment upon the details of cases which are before the courts, and to enter into any discussion of the merits or demerits in the present instance of Mr. E. H. Waugh, or to criticise the action of the directors of Great Wheal Polgoth. These will all be dealt with elsewhere, and then will be the time to express an opinion. Thus much, however, we may say. It is already abundantly clear that sympathy will be utterly wasted upon those people who are now trying to discredit mining enterprise because they have lost their money. It does not relieve responsibility elsewhere we freely admit, but if people will throw away their cash for the want of taking common precautions the fault is theirs. Rogues have done a good deal of harm to the reputation of mining in the West, but after all its greatest enemies are the fools, whether they show their folly in investing money without due enquiry, or in rushing into the market with their shares directly they begin to think that everything is not *coulour de rose*.

We do not see that anything is to be gained by discussing the difference of opinion indicated at Carn Brea account between Capt. Teague and Mr. Bolden as to Mr. Basset's offer on account of the expenses of boring machinery. All ended amicably. A misunderstanding was admitted, and there the matter had better drop. Mr. Basset is one of the most liberal of mineral lords, and certainly Carn Brea shareholders have every reason to be satisfied with his attitude towards them. As to the financial part of the meeting, of course it was a great disappointment; but Carn Brea is a big mine, and has in all probability a big future, and more importance must not be attached to the temporary adverse balance than it deserves, especially in view of the favourable prospects reported.

As we suspected, the recent explosion of dynamite at Carn Brea, while nominally classed as "accidental," comes directly under the head of preventable disaster, and is due without any qualification to carelessness. Of casualties that are really and truly accidental in the sense that the occurrence is independent of any precaution, and in direct opposition to human foresight, the number is very small indeed, and the sooner this can be learned the better.

#### TRADE OF THE TYNE AND WEAR.

July 12.—The prospect for the steam coal trade north of the Tyne continues good, and an effort will be made shortly to increase the price of the best large steam coal, which is certainly relatively below that of the Welsh steam coal. It is true that the Scotch masters are pushing their coal into the Baltic and French markets, and they are accepting extremely low rates, and this militates very much against the coalmasters here getting better prices. There is a better enquiry for gas coal, and a good demand for manufacturing coal and for coke. The most notable feature in the coke trade is the large export last month, over 32,000 tons of coke were exported from the north-east ports. Newcastle exported the bulk—24,000 tons. Little coke is now exported from Sunderland. The output and shipments of North Country steam coal have been large during the past week. One firm has raised 18,000 tons for six days' working, and this is equal to three good steamers daily. Steamers are likely before long to do the bulk of the business for the coasting and continental trade. The Tyne and Wear stands pre-eminent for accommodation and dispatch for vessels of this class. On Monday and Tuesday there was a considerable rush for the best steam coal. Steamers cannot be placed for less than 10 or 12 days. There have been large arrivals of steamers and sailing vessels, and numerous orders have also been received from the Baltic and other foreign markets. It is not likely, however, that any immediate advances will be made in the price of this coal.

The report of the accountants in relation to the sliding-scale audit in the Northumberland coal trade states that the net average selling price of coal for the three months ending May, 1882, was 4s. 10-71d. per ton, there being a decrease of 2-57d. upon the average for November, 1878. The rate of wages will, therefore, remain unaltered. The certificate respecting the same subject in the Durham coal trade for the five months ending March 31 last was issued on Thursday last, and it shows that the average selling price of coal during that period to have been 4s. 7-41d., a slight increase on the previous return. This will cause no alteration in the rate of wages. The value of the immense output of coal on these rivers has, therefore, fallen about 2d. per ton all round, and this was hardly looked for, considering the great increase in the value of coke during the past few months; the value of other coal, however—house coal, for instance—has decreased during the same period. With the improvement in the coke trade the output of coking coal has been largely increased during the past year, and this has had a direct tendency to keep down prices for all classes of coal. The coal of this district is certainly at present below its normal value, and it is contended by some that if trade continues to improve as it has done during the past two years, that the price of coal must improve shortly, but if the output is constantly increased when the demand becomes a little pressing the upward tendency must be checked. There are also other considerations to be taken into account, such as the improvements effected from time to time in machinery for the purpose of economising fuel. Great progress has been made in this direction in marine engines, and also to some extent in connection with fixed engines, but there is still a large field here open to improvement. The smelting of iron consumes a large portion of the coal raised, and great improvements have been effected and are still in progress for economising fuel in the iron processes. In the early days of iron smelting in the North, when the only iron furnaces in existence were at Lemington and Walker-on-the-Tyne, over 4 tons of coal were used in the smelting of the ores in producing 1 ton of pig-iron, that is about 70 years ago; now the average consumption in the North is about one-half that amount. But there is a large economy in progress. At the Thornley Works, at South Stockton, heating furnaces are now being built, in which all the latest improvements will be embodied, and their results will be watched with interest. When it is considered that over

eight million tons of pig-iron is produced in the kingdom yearly, the importance of the subject is very apparent.

The iron trade quarterly meeting was held at Middlesbrough on Tuesday. There was a good attendance. The market was quiet, due entirely to the news from the East. Prices, however, remained very firm. Messrs. Connal's stock of warrants is now 120,908 tons, a reduction of 1531 tons on the week. The shipments of pig-iron have been fully up to the average for the week. The shipments of manufactured iron and steel have also been large, and the prices of all kinds of iron and steel were firm. Some heavy steel castings shown by Suthust and Southern were much admired. The castings were of crucible steel. Mr. T. W. Macnay and Co., of Middlesbrough, exhibited the oleojector, or injector lubricator, and also Ellis' patent safety water-gauge, which has great merits over ordinary gauges. Messrs. Phillips had a stand of Ragsone oils.

The startling news from Egypt created great excitement on the Newcastle Exchange, especially the news that the Suez Canal had been blocked. The interests of many commercial men in this district are at stake. Several firms hold large stocks of coal at Alexandria, sent on speculation and not sold. Those stocks represent a large amount of capital. Many of the shipowners have contracted for cargoes from these rivers to Bombay; and if they are prevented from getting through the Canal for any length of time the loss will be serious. The stoppage of the Canal will, of course, cause a great advance in freights to India. The improvement in the steam coal trade is fully maintained. The demand for both large and small coal is extremely brisk. Many vessels have no prospect of getting a turn within a fortnight.

THE MINERS' PERMANENT RELIEF FUND.—The annual meeting of this useful and successful society was held at Durham on Saturday. The hall was crowded, and the attendance of delegates larger than on any previous occasion, over 200 representatives being present, representing 77,302 members, an increase of 2047 members during the year. The secretary read the 20th annual report, which showed that the funds received during the year amounted to 46,144l., against 44,000l. in the previous year. The number of deaths during the year amounted to 200, 74 of this large number being due to the Trindon Grange disaster alone. The revenue of the society from April 1, 1881, to March 31, 1882, amounted to 56,489l. 17s. 5d., and the total expenditure was 48,990l. 0s. 3d., leaving a balance in favour of the society at the end of the year of 7499l. 17s. 2d., giving a total of 97,032l. 14s. 2d. as the capital account of the society. The report concluded with a graceful recognition of the aid given by the Bishop of Durham on the occasion of the late explosions in the Durham coal field. A long discussion took place on the superannuation allowances to old men: 1300 of those men are receiving 3s. per week, but the separate fund for this purpose has not been self-supporting, and it has been proposed to increase the subscription so as to make the fund self-supporting, and also to increase the pay to those old men. Ultimately the motion to increase the pay of those men to 4s. per week, and meet the increased expenditure by a slight increase in the payments, was carried by a large majority. A motion was also carried that an appeal be made to the ratepayers of Northumberland and Durham to assist the superannuation fund on the ground that they have been greatly reduced by the Permanent Fund. It was also resolved to appeal to the royalty owners in the district for assistance. The colliery owners, many of them, pay 20 per cent. on the contribution of the mines, and as the royalty owners derive great benefit from coal mining in the district they ought certainly to contribute to the support of this valuable institution.

The North-East Coast Exhibition of Marine Architecture and Marine Engineering, which is to be held at the Tynemouth Aquarium shortly, is attracting much attention. In addition to all the appliances in use in connection with marine engineering, &c., it has been decided to admit exhibitions of coal and coal shipping machinery and appliances. Great importance attaches to the shipment of coal in good condition, and the complaints that have been made as to the breakage of coal at some of the North-Eastern ports will render exhibitions of this class of machinery more than usually interesting.

Circulars have been sent out announcing the suspension of Mr. C. E. Muller, iron merchant, and also of the Erismus Steelworks, the liabilities being estimated at 200,000l.; assets not yet known. Mr. Muller is one of the oldest and most extensive iron merchants of Middlesbrough, and a year or two ago converted the Erismus Works at South Stockton for steel manufacture, which has since been carried on. Losses in pig-iron, as well as in connection with the steel works, have led to the suspension.

#### REPORT FROM DERBYSHIRE AND YORKSHIRE.

July 13.—Since last notice there has been very little change in the state of affairs, so far as regards the trade of Derbyshire and the West Riding. At the coal mines the men have been working short time, whilst the price of coal is exceptionally low even for the time of year. The business doing with the Metropolis has fallen off considerably of late, and during last month considerably less was sent by the various lines of railway than in any of the past nine or ten months. This shows that the London consumers have become far more economical than they were, for they have used altogether 172,000 tons less in the first half of the present year than they did in the corresponding one of 1881, although there was the usual increase in the population. Some of the collieries in Derbyshire have felt the falling off in a marked manner; Clay Cross, for instance, having only sent 17,000 tons during June, against the previous average of about 23,000 tons a month. Other collieries show a decline in a corresponding degree. The price is also lower than it has been for a considerable time past, some descriptions being delivered as low as 18s. per ton. Steam coal has been in fair request of late, but not to the extent of keeping the pits anything like fully going. In other qualities of coal there has been no material change. The iron trade, so far as the production of pigs is concerned, has been looking tolerably well, there being a large number of furnaces in blast without any extensive accumulation of stock. Mill iron is still comparatively quiet, although there are only some two or three works in Derbyshire where rolled iron is made. Some of the foundries are now turning out rather more work in the shape of pipes, pillars, and ordinary castings, whilst the machine works are kept fairly going.

At the steel rail works at Dronfield there is the usual activity, but there is now every appearance that the removal of the works will not be long delayed. Many persons have already taken their departure for the neighbourhood of the new works in Cumberland, for the tradesmen know that when the men have gone there will be nothing to remain for in Dronfield but a modicum of trade by which they could not obtain a living with greatly increased taxes. Such will be the position of those that remain, whilst there will be a great depreciation of property, for a good many houses will be altogether closed.

Some of the works in Sheffield are not so busy as they were a month or six weeks since, but others are as busy as they well can be. The heavy branches continue to be well employed, and there is an increasing consumption of both iron and steel in connection with them. There has been the usual make of pig in the district, but it only partially meets the requirements of manufacturers, so that a large quantity of hematite and other pig has to be imported, and this is certainly a great disadvantage, seeing that the carriage is a serious item. In armour-plates there is still the same activity that has prevailed for some time past, and there is every appearance that there will be plenty to do in them for a long time to come for most Governments having a navy of any pretensions. The activity which prevails in the ship-yards is felt by the makers of ordinary plates in Sheffield, who continue to turn out large quantities of them, as well as those required by boiler-makers. Machinists are favourably off for business, there being a steady demand for pulverising and coal-washing and drying apparatus. In stoves, grates, ranges, and other castings, the works are kept steadily going. For plain steel, both Bessemer and crucible, there has been a rather better demand of late, billets of the former in particular going off well. But, of course, the largest quantity is required for converting into rails, in which there has been no falling off. The only complaint with respect to this important branch of our trade is that

contracts have to be taken at a very low price, owing to the competition which prevails and the many new firms that have embarked in the steel rail trade owing to the heavy consumption of them. The cutlery houses are not so busy as they were, but there is plenty doing in edge tools, sheep shears, razors, saws, and files.

In South Yorkshire the coal trade is still in anything but a healthy state, and in even as regards steam qualities at some of the pits stacking has been obliged to be resorted to, a most unusual thing at this time of year. Coke, however, is still in good request.

#### REPORT FROM NORTH AND SOUTH STAFFORDSHIRE.

July 13.—This has been the week of the Quarterly Meetings. Alike in Wolverhampton yesterday and in Birmingham this afternoon the gatherings were large, numerous buyers and sellers being present from other parts of the country. Colliery-owners were not able to report very favourably of trade either as to demand or price, and the Staffordshire men complained of the inroads which are being made on their custom by the Cannock Chase people. Yet they were generally able to get better prices for manufacturing fuel than their competitors on the Chase by 6d. per ton, and here and there the advantage ran to 1s. per ton. Forge coal from the Chase was 5s. 6d. to 6s. 6d., while Staffordshire prices were 6s. to 7s. per ton, all long weight. Furnace coal ranged from 7s. 6d. to 10s. per ton. Steam coal was 5s. 6d. to 6s. 6d., but per imperial ton. The railway companies are buying largely from the Chase at the present time. House coal was 7s. to 8s. 6d. at the pits for best deep sorts, and 6s. 6d. to 8s. at the pits for shallow seams. Ironstone was not in large sale, but this was in part attributable to good transactions having taken place some weeks ago. Cokes were pretty firm. North Staffordshire hard washed sorts were quoted 15s. per ton delivered. In Wolverhampton yesterday pig-iron was declared unchanged on the basis of 65s. for Shropshire hot-blast sorts, 85s. for cold-blast sorts, and 65s. to 70s. for Staffordshire hot-blast. Part-mine pigs (natives) were 50s. to 57s. 6d., and cinder pigs about 40s. Hematites were quiet, prices being too high to encourage business. Barrow sorts were quoted 67s. 6d. and Tredegar sorts 65s. per ton. Finished iron prices were redeclared at 7l. 10s. to 8l. 2s. 6d. for bars of the "list" houses. Common bars were 6l. 10s. Hoops were active at 6l. 17s. 6d. to 7l. 2s. 6d. and 7l. 5s., according to brand. Sheets sold well at former rates. Common plates were 8l. to 8s. 6s., and superior sorts 9l. and on.

As 'Change closed in Birmingham to-day it was known that the Galvanisers' Association had met and had decided to advance prices 10s. per ton. This makes the official quotation 24-gauge in Liverpool 16l. in bundles. The Welsh tin-plate makers assembled and the mills were reported fairly active; the association suggested that the new price for Welsh cokes should be 17s. Liverpool. Wolverhampton pig, and finished iron prices continued.

There was a large display of exhibits on the Birmingham Exchange this afternoon. One of the most interesting was a machine for cleansing mill-scale, an invention of Mr. Henry Bennet. Before it is used for fettling in the puddling furnace the scale must be thoroughly washed from sand. This is effected by means of a square barrel revolving in a tank of water. The apparatus can be worked either by hand or by machine power. It will treat scale as fast as a man can feed it by shovelling. Messrs. Taylor and Challen showed plunger-blocks, shafting-carriers, and other engineering appliances, including a hand rotary shear for cutting sheet iron, up to 1-20 inch. Messrs. Openshaw and Co. showed in operation Devine's improved self-acting gas regulator, of which the essential feature is a leather diaphragm chemically prepared to resist the action of gas, whilst equalising the fluctuation of pressure, thus effecting an economy of from 20 to 40 per cent. The same firm exhibited a registered mitre-cutting machine, for the use of joiners and picture-frame makers; also a corner cramp, for gripping two sides of a frame during the process of nailing together. Mr. A. E. Wilson exhibited specimens of Kuehne's patent phosphor lead bronze, a new alloy, specially adapted for all purposes for which gun-metal, brass, or other friction-resisting material is used. The advantages claimed for phosphor lead bronze are:—1. Its self-lubricating properties.—2. Its much greater wearing capacity than any other metal or alloy.—3. Its great tensile strength, combined with extreme hardness.—4. Its non-liability to fracture.—5. Its coolness under continuous and excessive friction. The fire-brick and fire-clay goods of Messrs. Harris and Pearson, of Stourbridge, have been previously noticed, and the same remark will apply to the anti-corrodo tubes, fittings, and other goods of Messrs. James F. and S. Spencer (the Rustless and General Iron Company). The proprietors of the Iron Trade Circular (Ryland's) showed copies of their trade directory, with supplement for 1882, and specimens of Marston's patent letter-cases, and of Spence's metal. Specimens of iron ore from the Parcocha Mine, Somorostro, near Bilbao, showing from 48 to 50 per cent. of iron in the raw, were exhibited by Mr. John Lea.

#### REPORT FROM NORTH WALES, SALOP, AND CARDIGAN.

July 12.—The report upon the metalliferous mines and other works that come under his jurisdiction by Dr. Foster, her Majesty's Inspector of Mines for this district, is marked by clearness, fulness, and ability. From it it appears that there are 8421 persons employed in and about mines proper, and 13,375 persons employed in slate mines within the district. It is unfortunate that the whole of the slate mines of the Principality do not come under the Inspector's care, so that complete returns of production would be given of this industry in Wales. At present only those worked underground as mines are referred to, the vast open quarries of Carnarvon, Merioneth, and Montgomery not being taken into account. The proportion of fatal accidents per 1000 in and about mines was 1-21, which is a little below the average, and at slate mines 2-07; but among the persons employed underground the rate was 3-28, which is higher than that of coal mines. Impressed with the excessive character of this rate, Dr. Foster paid a visit at his own expense to the slate quarries of the Ardennes, which are similar in character to those of Festiniog. Here the death rate among the underground workers is 2-85. This lower rate Dr. Foster attributes chiefly to the absence of falls of roof caused by the practice of packing the space worked with debris like the "gob" of the colliers. I may be excused here for saying that at a slate quarry in which I am interested on the Moselle in Germany, this practice is adopted with great convenience and safety, and is well worth the consideration of the quarry owners about Festiniog, whether the plan could not be worked to great advantage in more ways than one by themselves. It is satisfactory to find that with the exception of a few dressers of ore at Amlwch and in Cardigan no women are employed at the mines. It is not so satisfactory to find that there has been a falling off in the production of lead last year by nearly 2000 tons, and that during the last 10 years there has been an almost continuous decline of the production of this ore amounting to nearly 6000 tons. The returns of minerals produced becomes fuller every year, but I think we have hardly the full quantity of some of them stated. For example, there is surely more limestone raised from the whole of the quarries of Wales and Shropshire than 18,894 tons. I think I could point to the quarries of one company alone where this amount is raised. The report is a very valuable one. The Coroner's inquest upon the death of the boy Kynaston, at the Ifon Colliery, has resulted in a verdict of manslaughter against the Hon. George Trevor, the agent, and Mr. John Williams, underground manager. Steps are being taken to form a North Wales Colliers' Union, and, as anticipated last week, the colliers about Wigan have struck work, and the masters now insist upon a 10 per cent. reduction. I should have said before that the production of copper ore and precipitate in Wales shows the very important increase of 1500 tons over the yield of the previous year, and as this ore is almost exclusively obtained from the Mona and Parys mines of Anglesey, it will be interesting to many to read the following account of a visit paid to these mines 90 years ago:—

"We had no difficulty in distinguishing this celebrated mountain (Parys), for it is perfectly barren from the summit to the plain below, not a single shrub and hardly a blade of grass being able to live in this sulphurous atmosphere. The mountain is about a mile in length,



and is the property of Lord Uxbridge and the Rev. Mr. Hughes, and the fortunate discovery of the copper took place a little more than 30 years ago, thus converting a piece of ground originally of very little value into one of the most profitable estates in the kingdom. The substance of the mountain being ore, the work is carried on in a very different manner from the custom of other mines; here are comparatively few shaft or levels, the greater part being quarried out so as to leave a vast excavation open to the day. There are two of these quarries or mines, which are worked by two different companies, the first goes by the name of the Mona Mine, and is the property of Lord Uxbridge; the other, called the Parys Mine, is shared between the Earl and Mr. Hughes. The view down this steep and extensive hollow is singularly striking. The sides are chiefly of a deep yellow or dusky slate colour streaked, however, here and there by fine veins of blue or green shooting across the cavern, mingled with seams of greyish yellow. The bottom of the pit is by no means regular, but exhibits large and deep barrows in various parts, where a richer vein has been followed in preference to the rest. Every corner of this vast excavation resounds with the noise of pickaxes and hammers, the edges are lined with workmen drawing up the ore from below, and at short intervals is heard from different quarters the loud explosion of the gunpowder by which the rock is blasted reverberated in pealing echoes from every side. The exterior covering of the mountain is an aluminous slate, the matrix grey cherts, the ore copper chiefly.—1. The yellow sulphurated.—2. Black ore containing copper mixed with galena, calamine, and a little silver.—3. Malachite, or green and blue carbonate of copper.—4. Native copper, but in very small quantity.—5. Sulphate of copper, crystallised and in solution.—6. Sulphate of lead in considerable quantity containing a pretty large proportion of silver.—7. Native sulphur. The number of men employed by the two companies is 1200 miners and about 30 smelters; the miners are paid by the piece, and earn in general from 1s. to 1s. 8d. a day. The depth of the mine in the lowest part is 50 fms., and the ore continues as plentiful as ever, and of a quality superior to that which lay nearer the surface. With regard to the annual quantity of ore raised, little certain can be mentioned. The Parys Mine has furnished from 5000 to 10,000 tons per quarter, exclusive of what is procured from the sulphate of copper in solution, and as the two mines employ nearly equal numbers of workmen, they probably afford about the same quantity of ore."

## TRADE OF SOUTH WALES.

July 13.—The steam coal trade of the principal ports for the month of June amounted to 516,284 tons foreign at Cardiff, with 68,138 tons coastwise; Newport, 115,366 tons foreign, and 160,974 tons coastwise; Swansea, 70,945 tons foreign, and 62,859 tons coastwise; Llanelly, 7518 tons foreign, and 9961 tons coastwise. Of patent fuel there were sent away from Cardiff 12,497 tons; Swansea, 22,667 tons of coke; Cardiff 3029 tons; Swansea, 247 tons; Newport, 247 tons. Last week the coal shipments amounted to 101,801 tons foreign from Cardiff, with 18,824 tons coastwise; Newport, 21,760 tons foreign, and 17,811 tons coastwise; Swansea, 15,871 tons foreign, and 14,179 tons coastwise. Good colliery screened may be quoted at 11s. per ton. Tin-plates do not rise in price so rapidly as could be desired, as the small makers are obliged to sell at any price to keep on their works. Common coals are about 16s. per box, and charcoal-made from 21s. 6d. to 22s. The amount exported during June from the whole country was 25,701 tons, against 17,126 tons in the corresponding month of 1881, and 15,965 tons in 1880, showing a considerable improvement in quantity. When the small makers are exhausted prices will, doubtless, rise rapidly. The patent pickling machines are now being used, and thus reducing the number of men employed. The iron exports from Cardiff in the month of June amounted to 17,664 tons, being 10,000 tons more than in the preceding month. Newport sent away 9951 tons; Swansea only 251 tons.

The battle between the freighters and the Bute authorities respecting the increased dock accommodation still proceeds with vigour. The employment of Mr. Abernethy, the famous engineer, by the freighters seems to indicate that they mean business. Mr. David Davies, M.P., has put down 50,000l., Lord Windsor has promised 150,000l., and the Great Western Railway Company 100,000l., making upwards of 750,000l. promised altogether. The consensus of opinion is in favour of Barry Island, the property of Lord Windsor, situate about 11 miles from Cardiff, and well adapted for the purpose. It is estimated that about 5,000,000 tons could be shipped there annually. Lord Bute will proceed with his Bill, but will not carry the scheme out if he is thwarted by the opposition. He is not strongly in favour of making a new dock on account of the small return for his outlay. The Roath Dock, which he contemplates building, will cost him 500,000l., and will not return more than 3 per cent., but he will recoup himself in the enhanced value of the surrounding land. The old Corporation of Cardiff gave his ancestor, it is reported, the whole of the foreshore along the Severn in return for an annual dinner, which was discontinued after the passing of the Corporation Reform Act, as well as some hundreds of acres upon which part of the town is now built. The rentroll of Lord Bute was at that time not more than 50,000l. per annum from his Glamorgan-shire estate, but now it cannot be less than 300,000l., and is increasing annually. He owes this wonderful increase to his father's foresight, who projected the docks, and thus made it possible to ship a large quantity of coal in a small time by the aid of the Taff Vale and Rhymney Railways. It is true that Lord Bute has a monopoly at the docks, but he and his father have spent 2,500,000l. upon them, and they are entitled to a reward for their enterprise, more especially as the present lord is a liberal employer in the best sense of the word.

## METALLIC PIPES AND TUBES.

The manufacture of pipes and tubes has always formed an important branch of our metal industries, yet comparatively few will be prepared to learn that the number of patents annually applied for of this class averages between 50 and 60, many of which prove highly remunerative to the patentees and of great utility to the manufacturers and to the public. The official Abridgements of Specifications relating to Metallic Pipes and Tubes, Part II.—London: Commissioners of Patents' Sale Department, Chancery-lane—extends from 1867 to 1876 both inclusive, and gives the outline descriptions of 500 inventions, so that the reader obtains 33 abstracts for a fraction less than 1d. It appears to be not improbable that the extension of electric illumination and the supply of electric power to the various districts of a town from a central station may create a demand for a new form of pipe, which can be cheaply and quickly laid, readily opened, and at the same time afford sufficient protection to the wires laid in it. In this connection, methods of joining and connecting pipes will probably become an important feature, and upon turning to the Abridgements to ascertain what inventors have been doing in the matter, it will be found that there are inventions for adjustable joints allowing for the pipes being set at various angles, ball and socket arrangements, methods of connecting broken pipes by a stuffing-box or packing, but joints, collars, and their equivalents combined with modified ends, expansion joints, flanged pipes, moveable flanges, and so on.

For the manufacture of pipes from copper and its alloys about 30 patents were applied for in the ten years, and for inventions connected with soft metal pipes about 40. It appears that in 1870 a patent was obtained by Hamilton E. Towle for electro-plating the interior of lead and other metal tubes or pipes. He proposed to immerse an anode of silver in the form of a rod at its lower end, which is closed by a stopper. The anode is insulated from the pipe by washers. The negative pole of a galvanic battery is attached to the pipe, and the positive pole to the anode by an insulated copper wire. When the pipe has been filled with a solution of silver so as not quite reach the top of the anode, the anode is drawn slowly forward by the copper wire, the pipe being occasionally rolled over as the plating progresses. This is, perhaps, an ingenious way of overcoming a difficulty, but if the object of the invention be merely to fit the pipe for the passage of potable water, some of the tinning processes described in the volume would probably be found quite as efficient,

less costly, and more quickly performed. This series of Abridgements appears to be carefully done, but are, for the most part, extracts rather than abstracts.

## GRYLLS'S ANNUAL MINING SHEET,

FROM JUNE 30, 1881, TO JUNE 30, 1882.

Containing the Quantity of Copper Ore sold from each Mine, British and Foreign—Average Price per 21 cwt., and the Amount of Money—The Average Standard, Produce, and Price for the Year, both in Cornwall and Wales—The Total Amount of Ore, Fine Copper, and Money—Each Company's Purchase—And the Particulars of Copper Ores sold at the Ticketings in Cornwall from June 30, 1881, to June 30, 1882:—

CORNWALL.	Ore—cwt.	Amount.	Price.
Bedford United	554	£1,937 17 0	£3 10 0
Botallack	69	379 14 0	5 15 0
Calstock and Danescombe	6	39 0 0	6 10 0
Carn Brei	48	320 16 0	6 14 6
Devon Great Consols	11,057	21,174 9 0	1 13 6
East Caradon	205	953 8 6	4 13 0
East Crebor	80	249 12 0	3 2 6
East Pool	631	1,719 4 0	2 14 6
East Wheal Uny	102	574 11 6	5 12 6
Gawton Copper Mine	547	789 10 0	1 9 0
Glasgow Caradon	870	3,580 0 6	4 2 6
Great Crinnis and Carlyn	65	309 0 0	4 12 0
Gunnislake (Clitters)	2,398	15,012 12 0	6 15 0
Holmbush	8	444 16 0	2 13 0
Levant	799	5,433 3 0	6 16 0
Marke Valley	2,120	6,327 16 0	2 19 6
Mellaneur	6,721	21,918 17 6	3 5 0
Mid-Devon Copper Mine	89	653 14 6	7 7 0
Mounts Bay Consols	45	199 2 6	4 8 6
New Cook's Kitchen	219	1,005 19 0	4 1 0
New West Caradon	85	293 17 0	3 9 0
Old's Precipitate	1	9 5 6	9 5 6
Pendarves United	1	17 17 0	2 19 6
Phoenix Mines	130	680 17 0	5 4 6
Prince of Wales	251	734 12 6	2 19 6
South Caradon	5,100	24,582 16 6	4 16 6
South Condurow	12	71 2 0	5 18 6
South Devon United	1,930	5,566 9 0	2 17 6
South Wheal Crofty	58	198 5 6	3 8 6
Trugo	43	144 15 0	3 7 6
Violet Seton	543	1,923 18 6	3 11 0
West Caradon	241	1,041 19 0	4 14 6
West Wheal Basset	9	40 14 6	4 10 6
West Wheal Seton	391	1,753 1 0	4 17 0
West Wheal Tolgus	1,043	6,088 3 0	5 16 0
West Wheal Comfort	82	249 7 0	3 1 0
Wheal Crebor	2,689	8,446 11 6	3 3 0
Wheal Eliza	35	190 15 0	5 9 0
Wheal Jewell	654	1,663 13 6	2 11 0
Wheal Uny	25	111 5 0	4 9 0

## WALES.

Arendal Ore	374	£1,193 14 0	£3 4 0
Berehaven Ore	1,519	7,266 5 6	4 15 6
Betta Cove Ore	2,990	11,270 6 6	3 15 6
Burnt Ore	538	343 14 0	0 13 0
Cambrian Ore	17	84 13 0	5 19 6
Carn Brei Ore	87	574 12 0	6 15 0
Caveira Precipitate	828	408 4 0	6 10 6
Caveira Ore	27	2,798 11 6	3 7 6
Copper Ashes	27	58 11 6	2 3 6
Copper Matte	15	229 1 6	18 5 6
Copper Ore	36	529 12 0	14 14 0
Copper Precipitate	140	5,833 0 0	41 13 0
Copper Residue	33	162 19 0	4 19 6
Copper Slag	2	6 2 0	4 1 0
Crombaine Precipitate	15	487 13 0	27 2 0
Cuba Precipitate	23	676 12 0	29 4 0
Foundry Ashes	28	128 16 0	4 12 0
Garonne Ore	659	3,836 16 6	5 16 6
Italian Ore	113	693 5 6	7 18 0
Mosterdrada Ore	157	753 15 6	4 16 0
New Quebrada Ore	143	940 4 6	6 11 6
Skimmings	6	105 0 0	17 10 6
Sobral Ore	12	81 15 0	6 19 6
Spanish Ore	234	2,316 18 0	9 18 0
Tan-y-Bwlch	142	814 6 0	5 14 0
Tigrony Precipitate	20	398 15 0	19 19 0
Union Ore	978	5,002 7 0	5 2 6
Virneberg Ore	391	2,462 7 0	6 6 6
West Ashton Ore	7	70 10 6	10 1 6

Copper Ores sold in Cornwall, from June 30, 1881, to June 30, 1882.

Copper ores	40,147 (21 cwt.)	Average produce	63%
Fine copper	2519 tons 17 cwt.	Average standard	£38 1 0
Amount of money	£136,696 13s. 0d.	Average price	3 8 0

Compared with the previous year.

Copper ores—decrease	986 (21 cwt.)	Fine copper—decrease	225 tons 6 cwt.
Amount of money—decrease	£6387 16s. 6d.		

Copper Ores sold in Wales, from June 30, 1881, to June 30, 1882.

Copper ores	9,554 (21 cwt.)	Average produce	83%
Fine copper	838 tons 19 cwt.	Average standard	£85 2 0
Amount of money	£49,735 5s. 0d.	Average price	5 4 0

Compared with the previous year.

Copper ores—decrease	15,205 (21 cwt.)	Fine copper—decrease	1265 tons 11 cwt.
Amount of money—decrease	£93,354 6s. 6d.		

Totals in Cornwall and Wales:—

Copper ores	49,701 (21 cwt.)	Fine copper	3355 tons 16 cwt.
Amount of money	£186,432 18s.		

Compared with the previous year.

Copper ores—decrease	16,931 (21 cwt.)	Fine copper—decrease	1490 tons 11 cwt.
Amount of money—decrease	£76,955 14s.		

Copper Ores purchased by the Copper Companies, from June 30, 1881, to June 30, 1882:—

Purchasers.	Ore (21 cwt.)	Tons copper.	Amount.
Vivian and Sons	12,031	857 17	£18,475 4 0
Pascoe Grenfell and Sons	8,134	544 6	29,543 4 10
Neill Druce and Co.	164,240	530 17	28,709 0 8
Williams, Foster, and Co.	10,982	742	40,914 0 11
Mason and Elkington	3,752	237 4	13,163 16 8
C. Lambert	2,680	206 8	11,352 17 9
Copper Miners' Company	824	56 16	3,378 9 6
Landore Smelting Company	1,858	130 5	7,775 0 3
Cape Copper Mining Company	360	22 16	1,263 0 0
Cwmavon Estate Works Co.	363	28 3	1,856 6 9

Copper Ores sold at the Ticketings in Cornwall, from June 30, 1881, to June 30, 1882.

Date.	Ore 21 cwt.	Money.	Produce.	Standard.
1881...	176,285	£872,474 4 6	61%	£120 9 0
1882...	165,701	85,589 1 1	61%	124 17 0
1883...	164,240	806,533 10 0	61%	125 3 0
1884...	148,777	678,641 3 0	61%	118 7 0
1885...	125,679	547,689 8 6	61%	107 1 0
1886...	121,815	554,029 19 0	61%	110 15 0
1887...	103,199	430,749 10 0	61%	103 3 0
1888...	90,227	374,612 0 6	61%	98 12 6
1889...	74,567	292,122 4 6	61%	93 11 0
1890...	67,543	316,213 1 9	61%	114 17 0
1891...	61,718	271,038 10 0	61%	110 5 0
1892...	51,327	216,218 8 6	61%	97 16 0
1893...	47,856	239,159 14 0	61%	110 0 0
1894...	57,173	277,630 18 6	61%	113 8 0
1895...	54,609	230,354 4 6	61%	103 3 0
1896...	51,447	187,340 18 6	61%	90 15 6
1897...	44,768	148,157 8 0	61%	86 14 0
1898...	40,525	152,502 9 0	61%	95 0 0
1899...	41,133	143,084 11 6	61%	93 7 0
1882...	40,147	136,696 13 0	61%	98 1 0

POWELL CONSOLS.—STARTING THE ENGINE.—The rejoicing on the occasion of starting the Baines engine at Fowey Consols inaugurates a new era of prosperity for the working miners of St. Blazey and the neighbourhood, and it is hoped that whilst affording profitable employment to them the mine will yield handsome dividends to the shareholders. The engine which has been erected by Mr. Mr. William West, of St. Blazey Foundry, is of 36-in cylinder, and for the present it will work 12 heads of stamps. It should be mentioned that St. Blazey was once the scene of great activity, Fowey and Par Consols alone employing over 3000 men, but for the past 12 or 14 years the depression has been lamentable. At the inaugural ceremony Capt. J. Thorne said that he hoped the undertaking which they had just seen started would prove a great success, and result in the employment of a large number of miners. It had been a great mining centre, and from the opening of the mine under the successful guidance of Capt. Pascoe everything went to show that they were still in a rich district. He wished them every success, and had great pleasure in asking them to drink to the health of Mr. Baines.—Mr. Hall, of London, in responding for Mr. Baines, thanked them for the manner in which they had received his name. They had taken the mine upon the recommendation of Capt. Pascoe, in whom they placed the greatest confidence. Mr. Baines was, like other men, anxious to make inquiry over his speculations, but what would prove successful to him

would likewise result in a success to the miners and the town of St. Blazey.—The Chairman then proposed the health of Capt. Pascoe, whom he had known for the past 35 years.—Capt. Pascoe, in responding, said that although the undertaking had only been started a few months and the engine just erected, they had 700 tons of stuff ready for the stamps, from which they hoped to return 20 tons of tin. Mr. Baines was a gentleman who would command a large amount of capital, and was one who did not forget the men in his employ. He had sent 10l. to be distributed among the men on the works that day, and if that was not considered enough they were to have a supper.—The health of Mr. West, engineer, and of the agent was then drunk, and in reply Capt. Manley said he had known the district all his life. He would much rather see loads of tin being driven through the streets of St. Blazey than the boilers being carried away as they had seen for so many years past. There was a general feeling that Fowey Consols will again become remunerative to all concerned.

## PROVINCIAL STOCK AND SHARE MARKETS.

CORNISH MINE SHARE MARKET.—Messrs. ABBOTT AND WICKETT, stock and share brokers, Redruth (July 13), write:—The market has been quiet during the past week, and although the standards have been advanced 2l. the prices of the leading shares have not responded. Subjoined are the closing quotations:—Blue Hills, 1 to 1½; Camborne Vein, ½ to ¾; Carn Brei, 12 to 12½; Cook's Kitchen, 3½ to 3¾; Dolcoath, 67½ to 68; East Pool, 5¼ to 5½; Killifreth, 5½ to 5¾; New Cook's Kitchen, 6 to 6½; North Busy, 1 to 1½; Pedan-drea, 3½ to 3¾; Santa Gertrude, 170 to 175; South Condurow, 8 to 8½; South Crofty, 10½ to 11; South Frances, 11½ to 12; Tincroft, 12 to 13; West Basset, 9½ to 10; West Kitty, 10 to 10½; West Peavor, 12 to 12½; West Frances, 9 to 10; West Seton, 17½ to 18½; Wheal Agar, 16½ to 16¾; Wheal Basset, 9½ to 9¾; Wheal Grenville, 10 to 10½; Wheal Peavor, 9 to 10; Wheal Uny, 3½ to 3¾.

—Mr. J. H. REYNOLDS, stock and share broker, Redruth (July 13), writes:—A fair business has been done in the leading shares during the week, but Egyptian news and fortnightly settlement being now on prices have somewhat given way and do not close at their best. On Monday last the smelters made a further advance of 2s. per cwt. in the standards. Subjoined are the closing quotations:—Blue Hills, 1½ to 1¾; Carn Brei, 12 to 12½; Camborne Vein, 2s. 6d. to 5s.; Cook's Kitchen, 3½ to 3¾; Dolcoath, 67½ to 68; East Pool, 5¼ to 5½; East Blue Hills, 10s. to 12s. 6d.; Killifreth, 5½ to 5¾; Marke Valley, ½ to ¾; Mellaneur, 5 to 5½; New Cook's Kitchen, 6 to 6½; New Kitty, 1½ to 1¾; North Busy, 1 to 1½; North Herodasfoot, 7s. 6d. to 10s.; North Pen-sidural, ¾ to ¾; Pedan-drea, 3½ to 3¾; Phoenix, 4½ to 5½; South Condurow, 8 to 8½; South Crofty, 10½ to 11; South Frances, 11½ to 12; Tincroft, 12½ to 13; West Basset, 10 to 10½; West Frances, 9½ to 10; West Kitty, 10½ to 11½; West Peavor, 12 to 12½; West Pol-barn, 14½ to 15½; West Pollice, 5½ to 5¾; West Seton, 18 to 18½; West Tolgus, 13 to 14; Wheal Agar, 16½ to 17; Wheal Basset, 9½ to 9¾; Wheal Boys, 1½ to 2; Wheal Grenville, 10½ to 10¾; Wheal Hony and Treawney, 2 to 2½; Wheal Kitty, 1 to 1½; Wheal Peavor, 9 to 10; Wheal Prussia; ¼ to ½; Wheal Uny, 3½ to 3¾; Wheal Jane, ½ to ¾.

—Mr. S. J. DAVEY, mine shareholder, Redruth (July 13), writes:—But very little has been done in our market this week. Dolcoaths have fallen 2, Killifreth ¼, Pedan-drea ¼, and South Frances ½. East Pools and Wheal Agars both advanced, and subsequently declined to their previous prices. Smelters further raised the tin standards 2s. Subjoined are the closing quotations:—Blue Hills, 1½ to 1¾; Carn Brei, 12 to 12½; Cook's Kitchen, 3½ to 3¾; Dolcoath, 67 to 68; East Blue Hills, ¾ to 1; East Lovell, 1¼ to 1½; East Pool, 5½ to 5¾; Killifreth, 5½ to 5¾; Mellaneur, 4½ to 5; New Cook's Kitchen, 6 to 6½; New Kitty, 1½ to 1¾; North Busy, ¾ to ¾; Phoenix, 4½ to 5½; Pedan-drea, 3½ to 3¾; South Condurow, 8 to 8½; South Crofty, 10½ to 11½; South Tolcarne, 2½ to 3; South Frances, 11½ to 12; Tincroft, 12½ to 13; West Basset, 10 to 10½; West Frances, 9½ to 10; West Kitty, 10½ to 10¾; West Peavor, 12 to 12½; West Pollice, 5 to 5½; West Tolgus, 13 to 15; West Seton, 17½ to 18½; Wheal Agar, 16½ to 17½; Wheal Basset, 9 to 10; Wheal Boys, 9 to 9½; Wheal Conford, 14½ to 15½; Wheal Grenville, 10½ to 10¾; Wheal Jane, ½ to ¾; Wheal Peavor, 9½ to 10; Wheal Kitty, ¾ to 1½; Wheal Uny, 3½ to 3¾.

—Mr. M. W. BAWDEN, Liskeard (July 13), writes:—The mining market shows but little change or variation in prices. The steady advance on the tin standard does not seem to effect good shares in a proportionate degree as formerly. To-day's business is mostly confined to the settling. Subjoined are the closing quotations:—Bedford United, 1½ to 1¾; Carn Brei, 12½ to 13½; Cook's Kitchen, 3½ to 3¾; Dolcoath, 69 to 69½; Devon Consols, 5½ to 6; Devon Great United, ¾ to ¾; East Caradon, 4½ to 5½; East Herodasfoot, ½ to ¾; East Pool, 5¼ to 5½; Gawton United, ¾ to ¾; Glasgow Caradon, ¾ to ¾; Gunnislake (Clitters), 2½ to 2¾; Herodasfoot, ¾ to ¾; Hingston Down, ¾ to ¾; Killifreth, 5½ to 5¾; Marke Valley, ¾ to ¾; New West Caradon, ¾ to ¾; North Herodasfoot, ¾ to ¾; Old Gunnislake, ¾ to ¾; Phoenix United, 2½ to 3; Prince of Wales, ¾ to ¾; South Caradon, 10½ to 11; South Condurow, 8 to 8½; South Crofty, 10½ to 11; South Frances, 11½ to 12; South Devon United, 5½ to 6; South Frances, 12 to 12½; Tincroft, 13 to 13½; West Basset, 11 to 11½; West Caradon, 1½ to 1¾; West Frances, 10 to 10½; West Mary Ann, ¾ to 1; West Peavor, 12 to 12½; West Phoenix, ¾ to ¾; West Seton, 18½ to 19; Wheal Agar, 16½ to 17; Wheal Basset, 9½ to 10; Wheal Crebor, 2½ to 3; Wheal Grenville, 10½ to 11; Wheal Hony and Treawney, 1½ to 2; Wheal Kitty, 1 to 1½; Wheal Jane, ½ to ¾; Wheal Peavor, 9 to 9½; Wheal Uny,



portant advance. Wabash issues, Ohio and Mississippi shares, Oregon and California Preferred, Pennsylvania, New York, and Ohio 1st Mortgage, and Pennsylvania and Erie shares being most inquired for. Philadelphia and Readings remain rather flat on the doubt as to the success of their late bond issue not being accepted willingly by the shareholders.

**HULL.**—Mr. W. FOWLER SUTTON, stock and share broker, Saint Mary's Chambers (July 13), writes:—The stock markets have naturally been very unsettled this week, although exhibiting considerable strength yesterday, which, however, to-day has to a great extent disappeared. Brighton's have been by far the worst market, and the "bears" at present have it all their own way. The "back" on the stock should, however, bring about a rally later on in the account. To-day the fall has been nearly 5 per cent., apparently, most probably, by the heavy damages the company was cast in at a compensation trial yesterday, 5000*l*. Canadian stocks are firm as the traffic is improving, and there is yet considerable margin for a rise. The "boom" in Americans seems at last to have set in, as prices daily come higher from New York, and their crop prospects are especially good, while ours unfortunately are very doubtful. There is but little animation in foreign bonds apart from Egyptian and the Turkish Loan. Present prices are calculated to bring in capitalists and other strong holders, although any material advance will probably be a work of time. Local stocks firm. Hull Banks, 13½ to 13¾; London and Yorkshire Bank, 43s.; Hull Docks, 74 ex div.; Hull Trams, 10; Earle's Shipbuilding, 24; and Hull and Barnsley (2*l* paid), ¾.

#### SCOTCH MINING AND INDUSTRIAL COMPANIES SHARE MARKETS.

**STIRLING.**—Mr. J. GRANT MACLEAN, sharebroker and ironbroker (July 13), writes:—During the past week markets have been quiet, owing to the wet weather and the outbreak of hostilities in Egypt; but the tone has latterly been better, owing to the more pacific advices from that quarter. The Board of Trade returns continue very satisfactory and the money market is easy, so that with good crop prospects, a settlement is only required of the political situation to give investors confidence.

In shares of coal, iron, and steel companies there is no particular change to notice. In the Scotch pig iron market the price of warrants has advanced from 42*s*. 1½*d*. to 50*s*. 1½*d*.; the political news has kept business quiet, but the reports from all quarters are favourable, and if shipments continue good, prices seem likely to go higher. The Benhar Company has sold its property for 97,500*l*. to a company promoted by the present shareholders, and, of course, subject to its being successfully floated. Altamira is at 25*s*. ditto (bonds), 7*s*.; Belcoek Vaughan, 26½; Chapel House Colliery, 14*s*. to 20*s*.; Llynvi and Tondur, 6*s*. 1*d*. to 3*d*.; ditto (pref.), 6*s*.; and Marbellas, 6*s*. 3*d*. to 6*s*. 6*d*. In shares of foreign copper concerns prices are steady. Tharsis remain at 40½ to 40¾, pending the result of the appeal of their case in the Court of Session. Norway Copper (pref.) are at 10*s*. 5*d*.; Vicaya Santander, 12½; and York Peninsula (pref.), 17*s*. 6*d*. to 20*s*.

In shares of home mines business has been quiet, although the rise in the tin market has made further progress. East Craven Moor, Herodsfoot, and Wheel Jane shares unaltered. Bell Yean are at 10*s*. to 15*s*.; Bodirris, 2*s*.; Carn Breas, 12½; Carpellas, 2*s*. 6*d*.; Caron, 2*s*.; Carn Cambrone, 12*s*. 6*d*.; East Blue Hills, 10*s*. to 11*s*.; East Wheat Row, 5*s*. to 10*s*.; East Roman Gravel, 7*s*. 6*d*. to 10*s*.; Gover Consoles, 5*s*.; Great Holway, 4*s*. to 5*s*.; Indian Queen, 3*s*. 9*d*.; Langford, 6*s*. to 8*s*.; Mount's Bay, 5*s*. to 7*s*. 6*d*.; New Penrose, 2*s*. 6*d*.; Old Owlcombe, 1*s*. 6*d*.; Old Shepherd, 5*s*. to 7*s*. 6*d*.; Pennant, 5*s*. 6*d*.; Parkas, 3*s*. 9*d*.; Rhosamer, 5*s*. 6*d*. to 6*s*. 6*d*.; South Devon, 12*s*. 6*d*. to 17*s*. 6*d*.; St. Just United, 10*s*.; Tamar, 7*s*. 6*d*. to 10*s*.; United Van and Glyn, 7*s*. 6*d*. to 12*s*. 6*d*.; Van, 5*s*. to 6*s*.; Waltham United, 5*s*.; West Corbet, 12*s*. to 14*s*.; Wheel George, 6*s*. 6*d*.; Wheel Owles, 7*s*. to 8*s*.; Wheel Coates, 10*s*. to 12*s*. 6*d*.; and Wheel Fortune, 10*s*. to 15*s*.

In shares of oil and silver mines prices are generally easier. Richmonds have declined from 8½ to 7½. There are two rival schemes for reconstructing the Quartz Hill Company, which are to be considered at the meeting on July 18. Akankos are at 5*s*. to 7*s*. 6*d*.; Asia Minor, 10*s*.; Colombian Hydraulic, 3*s*. 9*d*. to 5*s*.; Consolidated, 3*s*. to 5*s*.; Dieu Donne, 2*s*.; Indian Consolidated, 13*s*. 9*d*. to 15*s*. 6*d*.; Indian Trevelyan, 12*s*. 6*d*. to 15*s*.; Indian Kingston, 5*s*. to 6*s*. 6*d*.; Isabelle, 7*s*. 6*d*. to 12*s*. 6*d*.; Kapangas, 15*s*. to 17*s*. 6*d*.; Mysore Reef, 2*s*. 6*d*. to 5*s*.; Nava de Jadraya, 1*s*. 6*d*.; New Gold Run, 4*s*. 6*d*.; ditto (pref.), 5*s*.; New Calais, 10*s*. to 15*s*.; Nouveau Monde, 7*s*. to 9*s*.; Orango, 35*s*. to 40*s*.; Rio Grande do Sul, 15*s*. to 20*s*.; Rhodes Reef, 12*s*. 6*d*. to 15*s*.; Simon's Reef, 2*s*. 9*d*.; Tolima, A, 2 to 3; and Victorine, 7*s*. 6*d*. to 10*s*.

In shares of oil and miscellaneous companies prices are generally lower. Glasgow Coal Exchange are offered at 14*s*. and Laves' Chemical, 5½ to 5¾.

**EDINBURGH.**—Messrs. THOMAS MILLER AND SONS, stock and share brokers, Princes-street (July 12), write:—The market for home railways has remained inactive. The only stock which shows any considerable change is Brighton Deferred, which on the announcement of the dividend on the ordinary stocks at the rate of 24 per cent. per annum has receded from 128½ to 124½. The announcement of the Metropolitan dividend at the rate of 5 per cent. has not been followed by any change. Caledonian remains at 104½. Great North of Scotland has receded from 57½ to 56, the continued decrease in the traffic returns apparently affecting the stock. North British and Highland are scarcely altered, at 93½ and 103½ respectively. Canadians have been very good. Grand Trunk Ordinary has risen from 18½ to 19½, the Second Preference from 86½ to 87½, the Third from 42½ to 44½. Great Western shares from 13½ to 13¾. Americans have been strong, and have generally risen from ¼ to 1 per cent. Some banks stocks have been enquired for. Bank of Scotland has advanced from 302 to 345. British Linen from 292 to 295. National has receded from 300½ to 300. Commercial from 5¼ to 5½, and Union from 23½ to 24½. Standard Life Assurance shares declined from 53½ to 53, but this is almost the only change in insurance shares. There has been little done in mining shares. The only change worth mentioning is a fall in Clyde Coal from 35*s*. to 34*s*. 6*d*. Hudson's Bay, after falling from 32½ to 30½ have recovered to 32½. Prairie Cattle shares have improved from 14 to 15½, and the new from 13½ to 15½.

#### IRISH MINING AND MISCELLANEOUS COMPANIES SHARE MARKET.

**CORK.**—Messrs. J. H. CARROLL AND SONS, stock and share brokers, South Mall (July 12) write:—Market remains dull, and Great South-eastern were bought at 112½ to 112¾; and Midlands also changed hands at 83½ to 83¾; and Macroom were offered at 6½. No change in Bandon or Limerick. National Banks were done at 23½, and Munsters at 7. Hibernians also changed hands at 31½; no change in Provincials. Cork Steam Packet remain 10½, and Lyons shares at 5½. Gas shares were done at 6½, and Gresham Hotels at 3½. Goudings were also wanted at 8½; and Breweries at 5½. No change in Harbour Board Debentures.

**INDIAN GOLD MINES.**—The appeal of Mr. Edwin Harris, the discoverer of the Wynad Gold Fields, against the decision of the Vice-Chancellor—which had been given in favour of the representatives of the bankrupt firms of Smith, Fleming, and Co., W. Nicol and Co., and others of the same series and the (Glasgow) Indian Gold Mines Company—has been heard before the Court of Appeal and dismissed. The Master of the Rolls in giving judgment said that the Vice-Chancellor had heard the witnesses and seen the correspondence and had found that the agreement, alleged by Harris to have been made, had not been proved. There could be no appeal against that decision, but an appeal had been brought founded on the discovery of a letter which was not before the Vice-Chancellor, and great reliance was placed upon this by the appellant. This letter was from Maxwell to John Fleming, and was dated June 1, 1877. The material portion of it was—"I hope you will not take in any friends in the quartz reef business. Should it turn up trumps I can finance it here (Bombay) and in this way keep all the spoil to ourselves and the man Harris and old Morton. We are too poor to be generous in such matters." The ordinary contract of partnership did not authorise one partner to enter into a new partnership for his firm. The appeal must be dismissed. It might be well that his lordship should state what, in his opinion, the real agreement was. He thought there was sufficient to show that the plaintiff was to be remunerated for the work which he did. As to that, no doubt Maxwell had authority to remunerate an agent. If the firm had not gone into liquidation the plaintiff would have been entitled to receive remuneration on a quantum meruit. That could not avail in this action. Whether it could in proving in the liquidation his lordship could not say, because the respondents said they had a defence which had not been gone into. As to the claim here, which was a claim to follow the assets, it could not succeed.

**MINERAL RESOURCES OF ARIZONA.**—Mineral specimens are so frequently collected for their peculiarity rather than for their commercial value that the beauty of a cabinet is often more considered than its utility. This defect has been recognised and remedied in the collection of assayed typical specimens of ores from Southern Arizona which has been made during the past two years by Mr. Stephen Rickard, son of Prof. W. T. Rickard, F.C.S., the well-known analytical chemist. The collection, which will be interesting and valuable for the purpose of comparison, includes gold, silver, copper, and other ores from every district within 100 miles of Tucson, Arizona, and contains between 500 and 600 specimens (selected from some 5000 samples assayed), marked with their assay value as determined in Prof. Rickard's office in the ordinary course of business, together with the names of the mines or districts whence obtained, as well as the mineralogical character of the specimens. This being

a matter of interest, as serving to illustrate to parties desirous of investigating the value and character of Arizona's mineral resources, it may be added that very few of the specimens assay less than \$100 per ton, while some run into the thousands. An assay of the pulp which had accumulated in his office from many hundred assays from all sources—good, bad, and indifferent—for over six months, was made some time ago by Prof. Rickard, which yielded \$108.37 in silver and \$25.01 in gold; total, \$133.38 per ton. This is very gratifying to those interested in Arizona mines, particularly when it is remembered that a large proportion of the samples from which the pulp had accumulated contained little or no gold or silver.

#### Meetings of Public Companies.

##### OOREGUM GOLD MINING COMPANY OF INDIA.

The ordinary general meeting of shareholders was held at New Exchange Buildings, George-yard, Lombard-street, on Thursday, Mr. MALCOLM LOW, J.P., in the chair.

Mr. T. W. MARTIN (the secretary) read the notice convening the meeting. The report and accounts were taken as read.

The CHAIRMAN said, with regard to their finances, they now occupied a very much stronger position than when the accounts were made up on May 31. At that date the credit balance at home was 1682*l*. Since then they had received from outstanding calls 2391*l*.; from interest 32*l*.; and from transfers 7*l*.; making a total of 2430*l*.; which, added to the 1682*l*, gave them 4112*l*. Deducting from this amount the sum of 1214*l*. expended since May—including 900*l*. just remitted to India—they were left with a clear working balance of nearly 3000*l*. actual cash at home. With regard to the reductions which they had been able to effect in their expenses, the directors had reduced their salaries by one-half, as stated at the extraordinary meeting. Then, by a discontinuance of the luxury of special agency in India—which he was bound to say had been very useful up to the present—and by a reduction of the expense of the consulting engineer at home, they had effected a reduction of 1900*l*. a year in the current expenses. They hoped these reductions would enable them to work the property at a total cost of 5000*l*. a month, and, consequently, their actual cash balance should last them at least six months from this time. Then, they had yet 5000*l*. to come in for outstanding calls. As to the probability of the greater part or the whole of this amount coming in, he could only say that he believed the measures they had adopted would bring the greater part of these calls in. The difficulties and anxieties of the directors in collecting these calls could be more easily imagined than described. Acting in the interests of the shareholders, and using all the tact and judgment at their command, they had applied individual treatment to individual default, and they had toiled most industriously in this matter, and he believed that they would get at least 4000*l*. out of the 5000*l*. now due, which would enable them to go on for at least 14 months, long before which they hoped and believed they would be crushing highly remunerative ore. They also had another obvious source of supply, for they had accepted the surrender of 8229 shares upon which 5*s*. each had been paid. He thought it a very unlikely thing that the 8229 shares would remain for a long period at the extremely low figure at which they now stood, and he believed the time would come, perhaps sooner than a good many gentlemen might expect, when they would be able to re-issue these shares at par, thus bringing 8000*l*. more into the coffers of the company. In any case they could easily raise 8000*l*. or 10,000*l*. by the issue of mortgage debentures. They did not propose to do this, but if they should at any time make such an issue the shareholders would of course have the first option of taking it up. Coming to the question of mining, the main and important points were the sinking of Munday shaft, which was now down 120 ft., and the sinking of the main shaft. The object in view was to get at the lodes at reasonable depths, where they might be certain to unbottom all the ancient workings, and might hope to intersect strong lodes, no longer disordered as at the surface. At the preceding meeting he expressed the hope that their agent would be able to cross-cut to the lodes at a point certainly not below the 150 ft. level, and he was very glad to see that their anticipations in this regard had been verified, as would have been seen from the report, and the agent was about to cross-cut at the 120 ft. level. The No. 7 pit was down 57 ft., and at and at the 60 ft. level a cross-cut was to be driven to the lode, and the 42 from the old air shaft was to be driven towards the main shaft. The two last were undoubtedly not working in depth, but in all probability the agent was anxious to make these shallow levels assist the heavy dead weight of sinking the main shafts. As to the supply of quartz to the stamps, the first source they might hope for was the Munday lode itself when intersected by the cross-cut about to be driven at the 120 ft. level, and the second source was the Champion lode when intersected by the cross-cut driving from the main shaft, while other sources of supply elsewhere would no doubt be forthcoming, from the shallow levels particularly; but for the permanent sources of supply in bulk they must look to the main and Munday shafts, and the workings at or below the 120 ft. level. He would be very much disappointed if the cross-cut now about to be driven to Munday's shaft did not cut the lode within the next three months. In that case they would have 40 ft. of backs to the 30, which, of course, would give them a very large quantity of stuff for the mills. The stamps were practically ready. They had 20 heads of the best sort of Australian revolving stamps actually ready, and these were capable of crushing 30 tons a day. The mining agent and staff were comfortably housed, and the various assay houses, stores, and out-houses had been provided and paid for. He was sorry to say the health of the statesman was not so good as could have been wished, the last two he seasons having been especially unhealthy; but they had now combined with the other companies on the spot to pay the salary of a medical man, and he would be asked to report upon the causes of the extraordinary unhealthiness which had undoubtedly existed during the past two hot seasons. The Chairman then expressed the hearty appreciation of the board of directors of the services rendered to the company by Mr. Rayner St. Stephens, consulting mining engineer, and with regard to the future prospects, reaffirmed the statement he had previously made as to his confidence in the undertaking. Their weak point had been their position in the market, but that their position in that respect had been very considerably strengthened since the last meeting. They exhibited progress not inferior to that made by any other mine in the Colar district; but he deprecated any specific promises as to when results would be obtained. Some of the Wynad companies had made greater progress than they had; but it must be remembered that while in the Wynad district they could work by adit levels, in the Colar district they were obliged to adopt the true method of mining—by sinking shafts. He was largely interested in a Cost-book mine in Cornwall where he had been plying calls for three years without any result, while in India, where the conditions of labour were so very different to the conditions in this country, they had only been at work two years. Time was an essential element of success in such an undertaking as this, but, with patience and energy, he had no fear of the results. The Chairman then moved the adoption of the report and accounts.

Mr. W. G. PROBY seconded the motion, and in doing so said their property was situated between Nundydroog on the north and Mysore on the south, both of which companies were managed by the eminent firm of Messrs. John Taylor and Co., who have come to the most positive conclusion that through those two properties was the true measure of the mine. This was the most positive testimony to show that these veins also run through the Ooregum property. Our predecessors came across pay-shoots, yielding for 20 tons upwards of 2 ozs. of gold to the ton, and they themselves had obtained 35 ozs. of gold from 44 tons of quartz. These were positive and indisputable facts from which they might draw their own conclusions, but it would be contrary to all mining and geological science and experience if these lodes did not become much more valuable in depth. Latest most satisfactory accounts had been received from the neighbouring mines.

Mr. O'LEMAN said that Captain Northcote was the only one of the original directors remaining, and he went on to complain of some of the items in the accounts. The brokerage amounted to 831*l*. 4*s*. 6*d*. which he thought was perfectly monstrous. (Hear, hear.) The preliminary expenses were put down at 1875*l*. and yet they had had to pay 615*l*. 3*s*. for stamps, registration, &c. How could they pass such accounts? He also complained that the shareholders in default should not have been relieved from their liability at the cost of the remaining shareholders.

Mr. SIMPSON asked if the 40,000 shares allotted to Messrs. Arbuthnot were still in their names?

Mr. WAINWRIGHT also drew attention to some of the items in the accounts, and said it was monstrous that the brokerage and preliminary expenses of such a company should have cost over 8000*l*. (Hear, hear.)

Mr. WALKER thought it was no use blaming the new directors. The old directors, with one exception, had disappeared. Perhaps the Chairman would say why they retired from the board.

Mr. L. S. NORTHCOTE said he joined the board at the commencement of the company, and so far as he knew everything had been done for the best for the shareholders. Everything was done conjointly after careful consideration.

The CHAIRMAN, in reply to these and other questions, said the directors had been regularly appointed. The late directors resigned at different times. Mr. McAdam Stewart owing to a difference with his colleagues, Sir Wm. Arbuthnot, as he was obliged to go out to Madras to take the management of his firm there, and Col. William Arbuthnot, on his appointment as Deputy Adjutant at Malta. The purchase price was decided by the prospectus. The brokerage was certainly a most enormous figure; but it was not against the Articles of Association. The brokerage amounted to 4*s*. per share on the shares disposed of by certain brokers ("Shame.") The preliminary expenses were perfect. Messrs. Arbuthnot and Co. held about 15,000 shares.

Mr. HENDERSON suggested that the new directors should have submitted themselves for re-election, believing that they would have been heartily re-elected. (Hear, hear.) The brokerage paid was perfectly scandalous, and he thought the shares should not have been surrendered.

Mr. HENDERSON observed that the Indian agency had been a very expensive one, the charge amounting to 13 per cent. on the amount which had passed through their hands.

The CHAIRMAN, in the course of a further reply, said the directors went thoroughly into the question of the calls in arrears, and where the shares had been forfeited they were assured that nothing more could be got. They got 1500*l*. on account of some of the shares, but that amount had been paid not by the shareholders themselves, but by friends who did not wish to see the matters pushed to the last extremity. The Indian charges had been very heavy, but they were now at an end. It would not be advisable to mention publicly the shareholders in default, but the shareholders could see these and any other particulars by calling at the office.

After a few remarks by Mr. YEARS supporting the new board, the reports and accounts were adopted.

Some discussion ensued, in the course of which Capt. NORTHCOTE expressed

his willingness to retire, as some few of the shareholders had not confidence in him; but the matter was eventually allowed to drop.

The meeting then closed, with the usual compliment.

##### THE CAPE COPPER MINING COMPANY.

The 19th ordinary general meeting of shareholders was held at the Cannon-street Hotel, on Wednesday—Mr. EDMUND A. PONTIFEX (the Chairman) presiding.

Mr. J. C. LEAVER (the secretary) read the notice calling the meeting; the report and accounts were taken as read.

The CHAIRMAN said when he last had the pleasure of meeting the shareholders, 12 months ago, he had the gratification on behalf of his colleagues and himself to express his thanks for the shareholders' kind recognition of the past services of the directors, and in doing so he reminded them that upon a somewhat similar occasion, eleven years previously, their liberality had been followed by an almost immediate increase in the prosperity of the company, and in the dividend payable to the shareholders; and he expressed a hope that that precedent might prove to be an augury for the future, and that their liberality might be rewarded by a like result. It was very gratifying to be able to state that the augury had been so soon fulfilled, and that the operations of the past year had been more successful than in any year of the company's existence. (Hear, hear.) This had been obtained without any considerable increase in the price of copper, although the price realised during the past year had been somewhat in advance of that realised in the previous year. Though that advance was small, yet when it was multiplied by the large quantity of metal which the company raised it made a great difference in the course of the year. The average price obtained had been 12*s*. 11*d*. per unit, against 12*s*. 1½*d*. in the previous year, and this difference of 8½*d*. eventuated in an increase of 19,000*l*. The assays had been as nearly as possible identical with those of the previous year—28½ per cent. in 1881, as against 28½ per cent. in 1880. As regarded the tonnage returns, they raised 15,339 tons in 1880, against 16,510 in 1881, being an increase of 571 tons in 1881. This increase had mainly been obtained from the Spectacle Mine, from which mine there had been raised 457 more than in the previous year. Indeed, the gradual increase in the receipts from the Spectacle Mine formed a very satisfactory feature in the company's operations, especially when it was considered that this mine was abandoned a few years ago; and he thought this circumstance should form some encouragement to the shareholders not to abandon the other exploratory work so lightly, because it seemed likely that many of these cuprous deposits, although disappointing near the surface, made again at greater depth. The production of the Spectacle Mine in 1878 was 277 tons, in 1879 it was 737 tons, in 1880 1163 tons, and last year 1620 tons, or nearly six times as much as four years ago. The raisings from the Ookiep mines were much the same as in the previous year, showing only a slight increase of 104 tons. The total cost of raising the ore returned for 1881, and bringing it to market was higher by 4*d*. per unit, the cost having been 7*s*. 6*d*. per unit in 1880, and 7*s*. 10*d*. per unit in 1881. This increase was divisible pretty equally between increased cost of mining and increase in the general expenses. A portion of the increase in the general expenses formed a not unsatisfactory feature, because it arose from the increased raisings of the Spectacle Mine. The balance of the result of those three factors—the cost of raising the increase in the quantity raised, and the increased cost of production, was that the profit during 1881 was about 20,000*l*. more than in 1880, the exact figures being that the profit for 1880 was 111,870*l*. and for 1881 131,712*l*. showing an excess of 19,842*l*. The increased cost of production had been about balanced by the increased quantity raised and the increased profit, therefore, might be considered almost entirely due to the higher price obtained for the ores. There was one feature in the accounts which could not be described as quite satisfactory; in fact very much the reverse—the large increase in the outstanding liabilities, which showed a considerable increase over even the high figure which they had attained in the previous year. Of course, they could not carry on a large business like this, combined with carrying and smelting, without having large outstanding liabilities, especially as they had been continually extending the works and operations without asking the shareholders for increased capital to carry them on. Still the directors felt that the item had arrived at an amount which must be promptly and largely reduced. In 1879 their liabilities were only 85,815*l*. in 1880 they were 124,500*l*. in 1881 they amounted to 231,239*l*. Of this large sum 182,377*l*. was accounted for by having at the time of closing the accounts value in ore which had been raised to Dec. 31st, but the proceeds of which had not been realised at the time. This accumulation had arisen from the increased freight for sailing vessels, which rise had taken place without any proportionate increase in the carrying trade of the country. No doubt it might be accounted for by the fact that few sailing-vessels were being built, the trade going so much into steam-vessels; therefore, the directors had been obliged to turn their attention to the use of steam-vessels, although they being very large, were not so well adapted for the port, nor were the facilities for loading on such a coast by means of the open boats at the company's disposal, quite suited to the rapid loading required by steamers, but the board hoped to overcome that, and in future the ore would be brought home more promptly than hitherto. As the business extended the outlay for the coming year must be always greater. The accounts were made up to April 30, so they had to deal with four months. In the accounts of 1880, 23,276*l*. was expended by April 30 on account of the ensuing year, in 1881 50,213*l*. had been expended on account of 1882. This increase of expenditure, 17,000*l*. odd, formed an addition to the liabilities. Stock and plant, &c., on the mines was nearly 10,000*l*. in excess of last year. In 1880 they were 90,600*l*. and in 1881 100,567*l*. showing an absorption of capital due to extended operations. He might mention that 23,000*l*. was accounted for by the value of works, stores, and plants at the smelting works; this was amply compensated for by the advantage derived from those works. Therefore, although they were making such satisfactory progress, it might be easily accounted for how it was that the directors were unable to distribute it so promptly as might be desired. That was the reason why they had deferred the payment of the bonus which had been declared until the remainder of the year, or until the end of the year had arrived, and the returns made available. To provide for these requirements, and also to extinguish as much as possible any assets which could not be realised when the mine ceased to work, they had again written off large sums to the credit of various reserves and guarantee funds, but the directors hoped this would be the last occasion upon which they would have to write off so large a proportion of profit to those various funds. The smelting works at Briton Ferry continued to yield satisfactory results. They had made a profit upon the works of 7000*l*. The indirect profit derived from the smelting-works was also considerable, as enabled them to sell or smelt the ore they thought proper. As regarded the future it was a matter of congratulation that although they had raised so much ore from the Ookiep Mine, the reserves were larger than they had ever been. At the same time it must be concealed that in the 92 ft. level they had not made any important discovery of ore, although it had developed large quantities between that and the 80 above it. The only ore met with in working the 92 ft. level had been four short patches, in all about 20 tons, which had yielded copper ore worth about 3 to 5 tons per fathom. But the stopes had yielded satisfactorily. The 105 had not been driven so rapidly as might have been, as the captains were afraid of getting more water in than they could manage before the new pumping-engine went out. When that pumping-engine arrived, and they sunk deeper, there was every reason to suppose they would find further considerable deposits of ore, in which case it would be immaterial that they had arrived somewhat closely to the point where they would exhaust the surface reserves of ore. The Spectacle Mine had made a profit of 8000*l*.; but in obtaining that they had trenced considerably upon the reserves which existed there. But this mine had always been rather a bumpy one, and they had never been able so far as the mine in the mine at Ookiep. On the whole there was no reason to be alarmed about the future prospects of the mine; and he thought he might again congratulate the shareholders upon the past year having been very satisfactory. (Cheers.) In conclusion, the Chairman moved the adoption of the report and accounts.

Mr. J. GALSWORTHY seconded the motion, which was put and carried.

Mr. ORLANDO WEBB moved the re-election of the retiring directors Mr. E. A. Pontifex and Mr. William Bevan, and said there was no company in the city of London where the attention of the directors was more directed to the interests of the shareholders than in this company.—Mr. Dwyer seconded the motion, which was carried.—Mr. R. Mackay was then re-elected auditor.

Cordial votes of thanks were then passed to the Chairman and directors, and also to Mr. Edward J. Carson (superintendent), and the staff in the colony, and the meeting broke up.

##### ENGLISH-AUSTRALIAN GOLD MINING COMPANY.

The annual general meeting of shareholders was held at the offices of the company, Austin Friars, on Friday, July 7, Mr. JOHN SCHOFIELD (the Chairman of the company) presiding.

The LONDON MANAGER read the notice convening the meeting. The reports and accounts were taken as read.

Major BELL said he wished to protest against that portion of the report which deprived the preference shareholders of a dividend.

The CHAIRMAN pointed out that after he had moved the adoption of the report any discussion could be raised upon it, and any amendment moved. With regard to the report it would be seen that the quantity of quartz raised from the eastern reef of the Sir Roderick Murchison Mines, and crushed by the company's mill of 15 heads of stamps in the year ending on March 11 last, was 10,021 tons. The produce of standard gold from this quartz, including the pyrites and the cleaning of the copper amalgamating plates, was 1889 ozs. 17 dwts. 11 grs., equal to an average yield of 3 dwts. 18½ grs. per ton of quartz. The total quantity of quartz raised from the western reef was 241 tons, but the gold from only 211 tons was included in this year's account, the produce from which was 19 ozs. 4 dwts. 4 grs. of standard gold, equal to an average yield of 1 dwt. 19½ grs. per ton of quartz. The total quantity of quartz milled was 10,262 tons, and the Australian expenditures was 6465*l*. 10*s*. 7*d*. equal to 12*s*. 7 1-5*d*. per ton, including the cost of mining, milling, exploring, and Australian management, which he considered was remarkably low. It was certainly as low as anything he had heard of. The St. John del Rey Company in Brazil had a new mine called the Cuiba, where they had no hoisting or expensive machinery, and it cost them 15*s*. to do the same work as this company did for 12*s*. 7 1-5*d*. The average amount of quartz crushed was 750 tons in every month of four weeks, and they had worked 15 heads of stamps, and they cleaned up about 13 times a year. The machinery had worked extremely well, and during the year there has been no breakage of any importance. The profit made on the quartz crushed was 1*s*. 10½*d*. per ton, and, considering the low yield, that must be considered very satisfactory. Another penny-



weight per ton would have given them an additional profit of 2000*l*. The total profit had been 181*l*. 4*l*. 10*d*., but from that amount had to be deducted the London expenditure, which he was sorry to say had been heavier than they liked, on account of some rather heavy lawyers' and printers' bills. The total amount of the London expenses was 318*l*. 11*s*. 1*d*., reducing the net surplus to 576*l*. 17*s*. 5*d*. From that amount it would be seen that they proposed to carry 500*l*. to the reserve fund. Nothing had previously been placed to reserve since the formation of the company, and every addition to the plant and machinery had been paid for out of capital. Last year 460*l*. odd was charged to capital account for additions to the plant, but had these additions been paid for out of revenue it would not have been necessary to carry such a large sum to the reserve fund for depreciation. It rested entirely with the directors whether or not this reserve should be created; but he thought they had exercised a proper discretion in doing what they had done. With regard to the future explorations, they had not been able to get any positive recommendation from their managers as to what was best to be done. There were three very important operations that they might carry out. One was the developing of the western lode, which was a very promising lode, and partook more of the character of a true fissure vein than the eastern lode. It had several well defined veins of quartz in it; but was not a compact lode. It had bars of sandstone and country, and instead of being 15 or 16 ft. compact it was split up, but the veins would probably come together as they drove or sank further upon the reef. This western reef was a most valuable one, and should be explored; but its development would involve considerable expenditure. Capt. Pollard in his last letter said he thought they should suspend all operations on it at present, but he (the Chairman) was not of that opinion. The second point was the sinking of the eastern shaft to a depth of 200 ft., which Capt. Pollard thought might be done if they could keep up the returns without materially increasing the expenditure. There was no doubt that it would be very desirable to do this work if they had the funds. The third point was to drive through the intermediate ground between the eastern and western reefs, which Capt. Pollard in his last letter said ought to be done, for there was an outcrop of quartz near the surface which Capt. Pollard considered to be part of the western lode. It would be impossible to say what either of these operations would cost, or whether the work could be done out of the profits of the mine; but if the results of the current year's working were not better than those of the past year they would probably have to spend 1000*l*. or more out of capital to do the work. The latest report received from the mine was dated April 24, and on the whole he read satisfactorily, but there was not much gold anywhere. In one or two points there was visible gold, but the last return was very unsatisfactory, the yield being lower than they had had for some time. Captain Pollard expressed the hope that they would do better in the next month. Advice from him were due in about a fortnight's time. With regard to the quantity of ore in reserve, Captain Pollard stated that they had sufficient ore in sight to last them another 12 months, and he hoped it would be payable. They had crushed 14,000 tons since Mr. Munday inspected the mine. The yield lately had not been quite up to the average, but if the mine in the future did as well as it had done in the past they would not make any great loss. He thought their prospects were very good if they only had capital to do all that was required, and he believed that the shares were really valuable as they were when they were selling at 30*s*. In the first six months of the year they made a very good profit, but in the second half of the year they did not make much, and, consequently, on the whole their profits for the year were not large, though they were larger than in the year before. The New Era Company, whose property joined theirs, had paid 4200*l*. in the half-year on a paid-up capital of 2000*l*., and their yield was not high, being 4 dwts. 15 grs., or about 1 dwt. more than that of the English-Australian. If this company only had an additional profit of 1 dwt. to the ton their profits would be increased by 2000*l*., and with 30 heads more stamps they could crush 10,000 tons more, and a profit of 4000*l*. at present, supposing they had the same rate of expenses per ton, but now with a larger output the cost per ton would be less.

Mr. GUTIERREZ asked what was the aggregate selling value of their property? The Chairman said it was about 10,000*l*.

Mr. GUTIERREZ said he had asked the question because he noticed that the South-East Wynaad was selling at 350,000*l*., and their yield was only 3 dwts. of free gold per ton. The English-Australian property was amongst good neighbours, most of which were selling at very high prices.

The Chairman moved the adoption of the report and accounts.—Col. H. J. J. SHARP seconded the motion.

The Chairman mentioned that the law costs did not belong exclusively to this year, but were parts of an old disputed claim with regard to the leases in Australia, and they could not get possession of the leases without paying the costs.

Major BELL, in protesting against the carrying of 500*l*. to the reserve, did not contest the legal right of the directors to do this, but said that the money really belonged to the preference holders but for whom the company had no right to pay. The preference shareholders were entitled to a non-cumulative dividend of 30 per cent. before the ordinary shareholders received anything, and the profits made would nearly have paid that dividend.

The Chairman, in reply, said the directors had no intention whatever of doing an act of injustice to either class of shareholders. The reason why the dividend was paid last year was because the directors inadvertently omitted to recommend that the profit should be carried to a depreciation or reserve fund; and they were advised that the omission was a fatal one, and, therefore, they paid the preference dividend.

Major BELL trusted that another year some regard might be paid to those gentlemen who came forward at a crucial moment and saved the property. The Chairman pointed out that it was impossible for him to say what they would do in the future with the profits made. No doubt the mine required a considerable amount of development beyond what was devoted to it last year, and if the proper amount of work had been done there would have been no profit. The directors, however, wanted to feel their way, but they could now devote more of the capital to the development of the property without danger of wrecking the concern. He pointed out at the same time that the preference shareholders had only subscribed 2000*l*., while the original shareholders had subscribed 20,000*l*.

A SHAREHOLDER observed that the directors' fees did not appear in the accounts. The Chairman replied that the fees were payable out of the profits dividend, and as no dividend had been paid they had received no fees. If the 500*l*. had been divided instead of carried to the reserve fund they would have had 50*l*. On the motion of Mr. H. W. LAMB, seconded by Mr. GUTIERREZ, the retiring director, Col. Sharp was re-elected, and Mr. H. C. Stewart, the auditor, was re-appointed.

The usual vote of thanks to the directors was passed, and the meeting then terminated.

#### WHEEL CREBOR MINING COMPANY.

The four-monthly meeting of adventurers was held at the offices of the company, Gracechurch-street, on Thursday.

Mr. J. Y. WATSON in the chair.

Mr. C. B. PARRY (the secretary) read the notice calling the meeting. The accounts, which were taken as read, showed a balance of assets over liabilities of 1335*l*. 3*s*. 6*d*.

The Chairman read the report of the committee, as follows:—The accounts presented to-day, and which have been regularly audited by the committee, show sales of copper ore, 2882*l*. 2*s*.; mudioc, 337*l*. 4*s*. 3*d*.; total sales, 219*l*. 6*s*. 1*d*. Charging four months' costs against these four months' returns a profit is shown of 810*l*. 15*s*. 9*d*. But, as you all know, there is 12 months in a year for returns, and 12 months of four weeks each for costs; thus once a year the extra month in, and another year is paid as the 9th week, leaving the actual profit at 408*l*. 5*s*. 1*d*. for labour and 65*l*. 2*s*. 4*d*. for bills, leaving the actual profit 339*l*. 6*s*. 6*d*. In these costs 234*l*. 1*s*. 9*d*. have been paid on account of the new shaft, 324*l*. 7*s*. 10*d*. for lords' dues, and 53*l*. 18*s*. 6*d*. for land and water rent. Of the last meeting we have paid off 438*l*. 9*s*. 6*d*. of the merchants' bills then owing, and our present position is this:—We have cash in hand 648*l*. 19*s*. 2*d*. Bills to receive at the end of the month 1392*l*. 14*s*. 3*d*., mudioc sold 154*l*. 18*s*. 9*d*. We owe merchants 860*l*. 8*s*. 9*d*., leaving assets over liabilities 1335*l*. 3*s*. 6*d*. Before we get the profits of the next half-year there will be three months' costs of, say, 1300*l*. to be paid, and one other month's costs, after which the committee cannot avoid referring, and they do so without imputing motives to anyone, and without if possible exciting any unnecessary ill feeling, in the hope that what has seemed almost inexplicable to them will receive at this meeting a full and satisfactory explanation. About the middle of April (the 12th), when a very important point in the mine, that of cutting the south lode in the shaft, was expected, Mr. PARRY, the secretary, received a letter from Captain Rowe referring to the great falling off in the values of the mine as given in the official report of the 1st of April, and at the same time a very gloomy view of the prospects generally. This, together with the official report, was open to shareholders at the office, and it frightened many, as well it might, into selling their shares. Within a few days of it a telegram arrived at the office announcing that a good lode had been cut in the 48, and then there was a rise in the shares. As, on the very day Capt. Rowe's letter reached London (April 12) Major Craig, one of the committee, was on the mine, and when he returned, some ten days afterwards, told us that, when on the mine on April 12, he had heard nothing there but what was most satisfactory and encouraging in regard to the general prospects of the mine. Captain Rowe's letter, however, was so written in his letter in a fit of the blues, forgetting the importance of the 48 cross-cut, or have written it not from his own inspection or personal observation, because it will be seen, almost from that day the mine has gone on improving, and the values have advanced from below 90*l*. to upwards of 200*l*. per fathom. When Mr. PARRY was appointed agent certain rules were laid down by the committee for his guidance.—1. To communicate to the office of the company the earliest and correct information as to its position and prospects.—2. To communicate with no one else directly or indirectly.—3. Not allow any inspector or agent of any other mine to go underground without a written order from the secretary. Capt. Rowe is present, and we have no doubt will be able to explain to you how he took that exceedingly gloomy view early in April, and how far the rules of the committee have been carried out in their entirety.

The Chairman then moved the reception and adoption of the report and accounts, which was seconded by Mr. SCHOFIELD, and carried unanimously.

The Chairman said that perhaps now would be the best time for Capt. Rowe to explain why in April last just as he was expecting to cut the lode in the 48 he took such a gloomy view of the immediate future of the mine.

Capt. Rowe said that when he took the lode had not been cut. He had been underground, and came up with his colleagues, and stated to him that they were looking somewhat gloomy at the part of the mine, and he was almost certain that the samplings would fall off, and his colleagues agreed with him, and (Capt. Rowe) said it was their duty to communicate the matter to the office. He, therefore, wrote in the utmost good faith, as he was in duty bound to, to the secretary know about the matter. As a matter of fact, it had fallen off, as at that time it was worth 90*l*. per fathom.

The Chairman said the total value then was about 80*l*. per fathom, and now was 200*l*.

Capt. Rowe said they had added a stop below the 103, and added on the 48. At that time no one could tell where it was going to, but fortunately it had increased, and the mine was now looking better. He did not see that any fault was to be attached to him for letting the shareholders know the proper and faithful position of the mine. He had no excuse to make in any shape or form,

as he described the exact position of the mine on the day on which he wrote. It was in a better position now, and he hoped it would continue so. He had nothing whatever to do with the price of the shares going up or down.

Mr. SCHOFIELD asked how long they would be before they cut the winze below the level?—Capt. Rowe: Two months in the western level and four or five months in the eastern level.

Mr. SCHOFIELD: Is the lode there as large as on the other side?—Capt. Rowe: No, we are driving on the same lode as the shaft is sunk upon. The winzes are not both on the same lode.

Mr. SCHOFIELD: How far will you cross-cut to get under the winze?—Capt. Rowe said about 3 fms. The lode got wider as they went down. It was good ground, and worth about 20 tons per fathom, and everything seemed going on as well as they could desire.

The Chairman, again referring to Capt. Rowe's letter of April, said the directors refrained from imputing motives, but they were bound to take notice of it, more particularly as on that particular day one of the members of the committee was on the mine, and the information he received there was to the effect that the mine was looking exceedingly well.

Major CRAIG: I was on the mine the day the letter was written, and I heard nothing unfavourable.

At the request of a Shareholder the letter in question was again read. Mr. SCHOFIELD said he did not see that there was anything in the letter. At that time Capt. Rowe thought there was a falling off, and he could scarcely foresee that there would be such an improvement as had taken place.

A SHAREHOLDER: How often do you go underground?—Capt. Rowe said on an average about eight or ten times a month.

Mr. O. WEBB: Do agents from any other mine ever go down?—Capt. Rowe: Not that I am aware of.

A SHAREHOLDER: Does your son go underground?—Capt. Rowe: Yes.

The Chairman: He is agent for another mine?—Capt. Rowe: He comes occasionally to assist me.

The Chairman: That is against one of the rules laid down—that no one should go underground without the written order of the secretary.

Mr. SCHOFIELD: Is your son in partnership with you?—Capt. Rowe: Not in the management of this mine.

Mr. O. WEBB: How often does he go down the mine?—Capt. Rowe said his son went down occasionally with the captain to assist him in measuring the ground, but not for the purpose of valuing. His son never went down in his absence.

Mr. O. WEBB said there was an impression abroad that Capt. Rowe's son went down much more frequently than Capt. Rowe had stated, and for other purposes than measuring.—Captain Rowe said this was incorrect; his son had nothing more to do with the mine than the man in the moon.

The Chairman: He always knows about the mine, and how it looks. There may be nothing wrong about it, but it gives rise to wrong impressions. May I ask is your son not with you when you write your weekly reports?—Captain Rowe: No.

The Chairman said he understood from the secretary that the son was certainly present on one occasion when Capt. Rowe was writing his weekly report.

Mr. PARRY said that was the case.

Capt. Rowe: My son never inspected the mine; as I have said, he occasionally assists in the measuring of the ground, but not in valuing.

Capt. WEBB: Well, he could not well shut his eyes.

The Chairman: It is an infringement of the rule, and must not occur again. The shareholders can only have the mine inspected once a fortnight, and it is very unfair to them that any agent not bound to the office should go down when he pleased.

Mr. O. WEBB: It has given rise to one unfortunate impression, and it is mischievous.

Capt. Rowe said his son, as he had stated before, only assisted in the measuring.

The Chairman said Capt. Phillips was a first-rate man, and ought to be able to do the measuring.

Capt. Rowe: If there is anything objectionable in it of course it can be discontinued.

Mr. SCHOFIELD said they had better give Capt. Rowe future instructions that his son was not to go down.

A SHAREHOLDER asked whether Capt. Rowe's son had ever been down the mine by himself?—Capt. Rowe said he had not, except on one occasion, when he asked him to go down when he himself was laid up with bronchitis. No advantage, whatever, had been taken of it.

The Chairman: No; but it lays it open to grave suspicions.

Major CRAIG said that when he was on the mine he was told that Capt. Rowe was irregular in his attendance, and if so, people might probably go down the mine without his knowledge.

Mr. GUTIERREZ said, that after the opinions expressed by the shareholders, it would be better for Capt. Rowe to reconsider his position.

After some discussion, the following resolution was passed:—"That the committee be empowered to take such steps as they may thereafter think proper to ensure the best management of the mine."

Major CRAIG's election to a seat on the committee was confirmed, and Mr. Schofield was added to the committee.

With a vote of thanks to the Chairman and committee the meeting broke up.

#### DENBIGHSHIRE CONSOLIDATED MINING COMPANY.

The ordinary general meeting of shareholders was held at the offices of the company, Great St. Helen's, on Monday—

Mr. FRANCIS RUDALL in the chair.

The notice calling the meeting was read by Mr. E. J. BARTLETT (the secretary), who also read the minutes of the last meeting.

The reports and balance-sheet were taken as read.

The Chairman: Gentlemen, it becomes my duty to propose, "That the directors' report and balance-sheet and the agent's report, now taken as read, be received, adopted, passed, and allowed." Before putting the resolution, I wish to make a few remarks. Our reason for that delay in not calling the annual meeting in January last has been explained in the report. We were in hopes of showing that the progress of the mine was thoroughly satisfactory, and I must say we are not disappointed with it on the present occasion. You have all had sent you the plan of the workings, from which you will see that very good discoveries have been made. There is no doubt that originally the engine-shaft ought to have been sunk to a greater depth, and it is now proposed that this shall be done. You see the mines have been carried on to the present time by means of the subscribed capital and the proceeds of lead sales, but there has also been advanced a considerable sum by the secretary, who finds now that he cannot by himself carry on the works any longer, and he has thought it better, and we think so too, that the matter should be brought before you whether the proposition we shall have to make at the special general meeting is the best to be carried out or not. We are in the hands of the shareholders, and if any shareholder has a better plan to propose for raising money we shall be happy to entertain it. We have considered the matter very carefully, but we shall be glad to hear any remarks from the shareholders present on the subject, and I will, however, invite Mr. Bartlett first to speak to you. He has paid the mine several visits during the present year, and is very largely interested. He can give you a clearer statement than I am able to do as to the workings and what is done, and what is proposed to be done. After hearing him we shall be in a better position to discuss any proposition which you may be able to put before us. I formally propose that the balance-sheet be adopted.

Mr. E. J. BARTLETT: Gentlemen, I must detain you, perhaps, somewhat longer than you may like upon this occasion, so that I may have the opportunity of thoroughly explaining to you the position of the mine at the present time, and what has been done by us since it has been known by the title of the Denbighshire Consolidated Company.

At the time this property was purchased I realised the great importance of sinking the main shaft to the depth of 150 yards from surface, and hence, when at that time we purchased the pumping-engine, I took advantage of the opportunity and secured the necessary pumps to take us down at least to the 150 yard level. Those pumps, or the greater portion of them, are now on the mine. At that time you will recollect the management was under the control of Mr. Pryor, in whom we had every confidence, and whose knowledge of the district generally, and of these mines particularly, we duly appreciated up to the time of his death, and seeing that there were evidently great expectations in regard to the probable results of the driving of the 112 yard level east on the course of the then proved lode, and considering the statements before us that it was likely to prove great bodies of ore, Mr. Pryor suggested that instead of undertaking the sinking of the main shaft we should urge on the driving of the 112 east, and so get at the proved deposit of ore that had been worked very successfully from shallow levels—more especially from the 66 east. Those who have been connected with the company from the commencement, will have clearly understood from the reports that have been issued from time to time, what were the results derived by the driving of the 112 east—that after an extension of something like 300 yards through very hard ground, we came to the place where the inclined run of ore should have dipped into the level, and at about that spot we had a small deposit of ore which promised very well at that time, but we found that the beds of ground we met in driving this long and costly level remained extremely flat. Instead of taking the dip or underlay that they had in the upper levels in passing from the 70 to the 112, a feeble underlay of 1 in 100, and we found rocks of ore sometimes weighing as much as 3 and 4 cwt. each. When I was last underground there by driving a pick into the ground great blocks of lead ore were produced. Not only I but others who know the district well have inspected that portion of the set many times, and we are firmly convinced that it was impossible for those great blocks of ore to be by themselves—they must have been in connection with a very large deposit. Well, we next turned our attention to the 66 level, because in the first place the ground in the driving of the 66 corresponded very much with the ground at Farry's shaft, and, secondly, it had a communication with Quaker's shaft, and there we should be able to draw the stuff to surface at the least possible cost. We were fairly successful in the 66 level. It was driven a considerable distance westward. Cross-cuts were put out, discovering other lodes, the result being that we were able to make con-

siderable returns by our operations in that direction. At the date of the last meeting there was special reference made in the report of Mr. Prince, the manager, and alluded to it in the remarks I had the privilege of making at that time—to the end of which we were making, now that we have exhausted, or partially exhausted, the 66, to continue sinking a pump from the bottom to try and get a communication with the 112 ft. level. That pump was sunk to a considerable distance, and we left in lead ore. In order to work it in the most economical manner, and our tramroad being at the 112, it was thought desirable by Mr. Prince that we should extend a cross-cut from the 112 west to get underneath this pump that we had sunk from our 66. We have driven this cross-cut some considerable distance, until it has reached the point where the pump will come down. We have not yet entered the soft ground, and at present operations are not being proceeded with. As far as regards this section of the ground, and our operations upon it by means of the cross-cut, there is every reason to think that expectations will be realised. The next most important point to allude to, and which bears very much upon the prosperity of this company, is a point I must correct myself upon. We threw out our cross-cut north close to the engine-shaft, where we intersected a lode which has proved to be one of the champion lodes of the district, and in my remarks at the last meeting I said that apparently the lode we had intersected was not the same lode that we had driven upon westward from our 112 east. At the time I was led to make those remarks the course of the lode at the one point was very different from its course at the other, but the result of the 12 months' working has thoroughly proved them to be one and the same, so that we have a length of something like a quarter of a mile from our engine-shaft to our further workings westward, and at the same time we have splendid communication and complete ventilation. You will recollect (going back for a moment to the rise in the 112 to come into the 66) that we met with a splendid deposit of ore. In our report of Jan. 5, 1881, we stated that a set of men had extracted something like 15 tons, and that we were enabled to let its further extension at something like 2*l*. a ton, which would give the company a great profit. We found the best of it in the roof, and we followed it, as you see in the plan, and as far as we have gone to the present time, we have worked that section of ground out. With regard to the various pumps, and the cost of sinking them, they gave the company a certain amount of profit, and were very successful, for not only were tributers earning good wages, but we derived a substantial percentage. I have been down all these workings myself, and, therefore, am speaking of that with which I am perfectly familiar. (Hear, hear.) At the present bottom there are rich courses of ore, but you must recollect this, that being below the influence of the engine-shaft, it was only by means of hand pumps that the men were able to go down to this depth, and in wet weather the water became too much for them. We, however, convinced ourselves of the fact that we had entered a large section of ore ground, for we made another trial to see whether it was simply a bunch, or whether we could depend upon it as a continuous deposit, and judge our satisfaction when I tell you that by far the most important discovery that we have made has been the course of ore going down in the bottom of the pump nearest the engine-shaft. I wished particularly, for the sake of my friends who have been with me in the undertaking so long, to come before you with a definite statement to explain why hitherto we have had such poor success. We have had indications of future wealth in these stones of ore, but these having vanished we have had to spend a great deal more money before we could get in the regular ore deposits. I think the reports of the directors and of Mr. Prince contain references to the amount of ore that we have been able to raise by the operations so conducted, and when I tell you that these small workings we have taken something like 150 tons of lead, you may be sure that we have had ample evidence of the existence of large deposits. With regard to a remark in the report that might have caused you anxiety, as to the water question, Denbighshire is not a heavily watered mine at all. During the summer the engine only works one hour in three. It is during the heavy floods that the water is troublesome, and then the engine works full time. Therefore, when you hear of these pumps being drowned out it is not due to the absence of pumping power, but simply to the fact that our pumps, being only down to the 112, it is impossible to get the water out, save with small hand pumps, and letting it run along to the engine-shaft. Our plan is to sink the shaft from the 112 to the 150, drive east and west underneath these deposits of ore, and then gradually all these points will be rendered dry. For this purpose it is very satisfactory to know that we have got to prove additional machinery. I was, however, suggesting that we should have additional boilers, because the present ones, which have been on the property for a long time, are consuming more coal than they should. It has been suggested that a sum of 2500*l*. will carry this shaft down to the 150 yard level, and render available these courses of ore. What we want to be assured of is that with the further proposed expenditure we shall have tangible results. If they were to be like the results of the past I should hesitate to throw more money into the property; but with these courses of ore proved, and with the knowledge of what we have going below, especially at this point, I can say, without fear of contradiction, that we have a property that has been as the shaft is down to the 150 yard level will give us satisfactory dividends, which will be increased if we get lead up to a better price. (Hear, hear.) As far as the scheme suggested is concerned, it is not the wish of the directors, and it is not my wish, to try and force upon the shareholders a proposition that involves the possible payment of 7*s*. 6*d*. a share, or certainly a liability of 7*s*. 6*d*. a share. I am sure the directors will be very glad to receive suggestions from the shareholders how the money is to be found. Having proved, at great outlay to myself, at last that this is a rich mine, I wish to tell the shareholders who have been so long associated with me of the fact, and to tell them also that, unfortunately, we have run short of money. I think the remarks I have made will justify any effort that may be made to push this mine to the position it should legitimately occupy—that of being one of the first lead mines in the Principality. (Cheers.) I shall be glad in this new scheme to do my part, but the directors will be ready to fall in with any other feasible scheme if this one now put before the shareholders is not approved.

Mr. BLAND: How long do you expect it will take to get the shaft down to the 150?—Mr. BARTLETT: Some few months. We shall intersect the course of ore within (say) four months from starting. In sinking the shaft I dare say we shall have to get a little deeper before we intersect the limestone beds—say, 10 yards.

Mr. DRUMMOND: Are you not likely to get more water?—Mr. BARTLETT: No; we are down to what we term the water level. We should not, probably, get much more water if we were to go down 100 yards deeper.

Mr. DRUMMOND: That is a very important thing to know. (Hear, hear.) The Chairman: The engine is sufficiently powerful to drain to the 150 yard level.

Mr. BLAND: Where does the water go?—Mr. GAMBLE: It is taken up by the pumps, and then we use it for dressing the ore.

Mr. BLAND: I suppose the pumps are powerful enough to deal with it?—The Chairman: Certainly.

Mr. BARTLETT: I have known the engine to be idle many hours at a time in summer.

Mr. DUKE: How would you require the 7*s*. 6*d*. a share to be paid?—The Chairman: I suppose in 2*s*. 6*d*. instalments, at intervals of three months.

Mr. DRUMMOND: Have you had any communication from shareholders?—Mr. BARTLETT: Some have had, but none have accepted the proposition, but others, amongst them two very large shareholders, have written to express concurrence.

Mr. BLAND: Do those who are against the proposal put forward any likely suggestion of their own?—Mr. BARTLETT: No, they do not.

Mr. BLAND: I have much pleasure in seconding the Chairman's motion regarding the balance-sheet and reports.—It was put to the meeting and carried unanimously.

The proceedings were then made extraordinary, and the notice convening the meeting having been read, the Chairman moved the first resolution:—"That it having been proved to the satisfaction of the members that this company cannot continue its operations successfully under its present constitution, that it be wound up voluntarily."

That Mr. Edward John Bartlett, of No. 30, Great St. Helen's, in the City of London, be appointed liquidator of the company."—Mr. DUKE seconded the motion, which was carried unanimously.

The Chairman then moved the second resolution, "That the liquidator be, and is, authorised to sell and transfer all the estate and effects of this present company to a company proposed to be formed and registered with limited liability, under the style or title of the New Denbighshire Mining Company (Limited), with a capital of 30,000*l*., divided into 20,000 shares, of 1*l*. 10*s*. each, for a sum of 21,958*l*. 17*s*. 6*d*., such sum to be paid to the shareholders of the Denbighshire Consolidated Mines (Limited), by the issue to them of 19,519 shares in the proposed new company, each of such shares to be credited in the books and capital of the new company as having the sum of 2*s*. 6*d*. each, and upon its formation to pay all the debts and liabilities of this present company, the same to be paid from the moneys to be derived from a call of the remaining 7*s*. 6*d*. per share upon such 19,519 shares."

He said it was evident that additional funds were required to carry on the mine to a successful issue, and the question resolved itself into how best to raise that money. The board had considered the matter carefully, and they thought the present scheme the most equitable to both large and small shareholders that could be devised, but at the same time the board were perfectly prepared to adopt any other that the shareholders might suggest, if deemed more feasible.

Mr. BLAND said the satisfactory feature of Mr. Prince's report was this, that he had proved where the best lode really was. (Hear, hear.)

Mr. BARTLETT: When we have met from time to time we have had courses of ore worth so many tons a fathom, and disappointment has been felt when these courses of ore have disappeared. Now I have to say that only a close study of this mine will enable you to determine its peculiar characteristics. We have Mr. Prince's positive statement—he has the actual facts before his eyes—that the courses of ore proved below the level are not quite so bunchy, but continuous deposits, so that I think we can feel very happy in regard to the future. We have had too many lodes, and one has robbed the other. Only in depth will they form a junction, and in depth we shall have passed all these bunches.

Mr. DRUMMOND: Does the price of lead still continue low?—Mr. BARTLETT: Yes, and I am afraid to prophecy when it will go up. All our calculations are, however, based upon the present price of lead.

Mr. BLAND: Are the mines successful working near you, or some distance off?—Mr. BARTLETT: They are very close. The Maes-y-Safn worked some 400 yards from the surface, and has given an immense quantity of ore.

A SHAREHOLDER: I suppose the Denbighshire was wrought before we took it. Mr. BARTLETT: Only to a small extent eastward. It was split up at one time, and worked by several small proprietors.

Mr. GRAY: When was it the cheap shares were issued? It appears to me that an immense amount of money has been spent on this mine. The whole of the capital is gone, in addition to 5000*l*. raised by the sale of a portion of the mine, and including the money owing to the secretary.—Mr. BARTLETT: The cheap shares were issued on Feb. 22, 1878, at 10*s*. each, and some were issued at 1*l*. subsequently. The great expenditure has been in driving our main lode. Our mine is, however, fully equipped, and the communication from end to end will be of great service in many ways—ventilation included. We have every reason to feel complete confidence in Mr. Prince.

Mr. ALFRED THOMAS said the engine-shaft should have been sunk at the first.

Mr. BLAND: I have been a shareholder in the mine for some years, and it seems to me that the only sensible and fair thing to do is to carry out the scheme of the directors. It is very evident that if the directors could have declared a dividend they would have done so. They can now say, here is the ore, and if we make the final effort with this we shall reap our reward.

Mr. BARTLETT: I do not think we can use a better argument in favour of this



effort than the fact that our own money has been put into the concern to bring it into its present good position. (Hear, hear.)

Mr. DRUMMOND: Will there be any expenses attending the formation of a new company?—Mr. BARTLETT: 50% will cover it.

Mr. THOMAS: Have you any promises of support?—Mr. BARTLETT said the promises he had had from large shareholders led him to think that the scheme would be supported. He held 1200 shares, some of which had cost him 3s. each. A very large amount of the debt due to him, when paid, would go back to the company in calls. They had, unquestionably, a rich mine, and he, personally, wanted it kept for the benefit of those who had borne the burden and heat of the day. The directors could do no more than lay the whole position before the shareholders.

Mr. BLAND seconded the motion, because it was a scheme conceived in the truest interests of the shareholders.—The motion was agreed to unanimously.

The CHAIRMAN, in reply to further questions, said the money would be called up as required, and only shareholders would have the option of taking these shares, and up to the number they were entitled to, subject to the 7s. 6d. call. Other allotments would only be made at par.

The confirmation meeting was fixed for July 24.

On the motion of Mr. THOMAS, seconded by Mr. DRUMMOND, the proceedings closed with a vote of thanks to the Chairman and Mr. Bartlett.

#### PELYN WOOD MINING COMPANY.

A meeting of shareholders was held at the offices of the company Great Winchester-street, on Tuesday,

Mr. CHRISTOPHER ROBINS in the chair.

Mr. WILLIAM BATTYE read the statement of accounts, which showed that the call amounting to 300% had all been paid with the exception of 411. 17s. 6d., 21. 10s. of which they would not receive through the failure of one of the shareholders. The labour account and bills in each month had been paid in full, and the balance to the credit of the company now amounted to 341. 9s. 10d. Mr. Battye also read the report of Mr. Chas. Thomas, of Cook's Kitchen Mine, as well as that of their own agent, which was as follows:—

July 10.—Since the last general meeting we have driven our adit level on the counter lode 40 fms., which has averaged from 3 to 4 ft. wide, and composed of gossan, friable quartz, and carbonate of iron, the soft part of which (18 in. wide) yields good stores of grey and yellow copper ore; the other portion of the lode is interspersed with ore presenting a highly mineralised appearance. We have not seen No. 1 east and west lode in the drive; in the last 20 fms., however, the counter lode, on which we are driving, is in places very large, and the wall on the west side has not been seen; we may yet find it at one of those points, as has often been done in cases of this kind in other mines by stripping down that side of the lode left in driving; but as we cannot be more than 30 fms. distant from No. 3 lode I recommend the company to confine this drive. Capt. C. Thomas, of Cook's Kitchen, has recently inspected the mine, and his report has been sent to the office. He unhesitatingly advises the continuance of this drive, and I fully endorse his recommendation, that, before we open out for No. 1 lode, to push forward to the intersection of the lodes ahead, which, at our present rate of drive, will be reached in three months from this time. I have great pleasure in stating that our prospects were never so bright and encouraging as now. Our kills are granitic, the granite is close at hand within the set, the size and characteristics of our counter lode are very good, gossan of the finest description. Depth of present end of adit from surface about 35 fms. These features, linked with the probability of reaching and opening on three lodes within the next four months are prospects of a most encouraging character, and I am persuaded cannot fail, on being accomplished, to very considerably enhance the value of the mine.

The CHAIRMAN said that he did not know that there was much to be said on the subject of these reports. They were just progressing similarly to what they were at the last general meeting in the direction of those east and west lodes from which they expected the results. They anticipated that they would have come upon the first lode before this meeting and it was a little disappointing to find that they had not done so although according to the inspection of Capt. Thomas there was no reason at all to expect that they would in due course come upon it. If the lode had taken an underlay a trifle more in the direction from the end from the great height 30 to 40 fathoms, a very trifling dip more to the south would have carried it several fathoms more away. At present, seeing the lode had been seen at the surface, of course, no one could say whether the same dip as seen at the surface would continue down. Sometimes it would dip a little more one way or another. Had it dipped a little more north they would have come upon it sometime ago, the probability, therefore, was that it was dipping a little more south and they had a few more fathoms to drive; but he should say within a week or a fortnight, judging from the reports and his own opinion as to what would take place, the lode would be intersected. Then there were two other lodes beyond that. All those three lodes were within a distance of 44 fathoms, so that by the next meeting the whole of those lodes should be cut, according to the present rate of driving. He had no doubt that the results would prove very satisfactory when they came upon the lode, particularly if there were the same indications that accompanied the cross-cut lode, or the cross-course, so to speak that they were now driving upon, as existed at the present moment there was a considerable quantity of silver and very rich grey ore in the lode, part of it which contained the silver and grey ore was something like 8 in. wide. Well, if it could be broken and dressed without being put to water he should say there ought to be something like 3 tons to the fathom, and should that particular part of the lode continue as well as it is at present, and should the results be such per ton as the assays that had been made by Matthew and Johnson, the value of the lode would be—produce of copper 22½, produce of silver 9½ ozs., and those together should give from 141. to 151. a ton from ore of that kind, and if this branch should continue at 8 in. wide that should give them 3 tons of this ore to the fathom. How far it was likely to continue so large and productive of that quality, of course, remained to be proved, but if they could only get 2 or 3 tons of that ore per fathom, of course, they would have a rich mine at once, notwithstanding that they had not intersected the east and west lodes, from which they expected the whole wealth of the property, and those having been found very productive in the adjoining mines where they paid large dividends, and as they were in the same strata and same description of country they had reasonable expectation of similar results to those attained by the adjoining mines. Should that be the case they had a very large property. These postponements were a little disappointing, but there was only a short distance to cut, and that arose from the lode taking a different underlay to what it did at surface, and he had every expectation that before the next meeting those three lodes would be opened. He moved that the accounts be received and adopted.—The motion was seconded by Mr. CLUXES, and carried unanimously.

The same committee were re-elected, and a call of 6s. per share was made.

Mr. BENNETT, in answer to questions, said that he believed that copper was likely to remain at the present price, and he thought the electric light would help them a little. They were saving a lot of copper ore in driving on the counter lode, and that would be available for market as soon as there was a sufficient quantity. With regard to the quantity of copper ore at surface, no doubt there was something like 8 or 10 tons.

Mr. BENNETT, in reply to questions from shareholders, stated that the lode could be stopped at 3s. per ton, and if the lode held on as good and wide as in the present end there would be many hundreds of tons of ore, and as they were from these backs, but of course all parties were looking to the east and west lodes for their great results.

A vote of thanks to the committee then terminated the proceedings.

GUNNISLAKE (Clitters).—At the meeting on July 3 (Mr. J. C. Isaac in the chair) the accounts showed a credit balance of 8807. 8s. 1d., and it was stated that in the accounts are included about 10000. on account of new machinery and plant. Our further and total liabilities on account of new machinery and plant is about 12000., half of which will have to be paid in the next four months' account, which will be more than met by the returns. The agency reported that the whole of the damage done by the explosion of the boiler shortly after the last meeting has been righted, and the engine and machinery put in complete and efficient working order. This accident has of course greatly interfered with the development of the bottom of the mine, and diminished the returns for the time. The house for the 22-in. engine to pump water from the river, for dressing and condensing purposes is built, and the stack will be finished by the end of next week. The house for the air compressor and engine for the boring machinery is also built and ready for the engine, which will be delivered this week, or as fast as the engineer can put it together. The 300 fms. of pipe to convey the water from the river to the dressing-floor is contracted for by Messrs. Thomas Spittle and Co., of Newport. The returns for the past four months have been 699 tons 13 cwt. 2 qrs., realising 35637. 1s. 3d. They sampled on June 30 computed 441 tons of copper ore of average quality.

INDIAN, KINGSTON, AND SANDHURST GOLD MINING COMPANY.

—Although capitalists who invest in public companies are entitled to full protection against being misled by inaccurate statements connected with the promotion of the companies in which they embark, it is a principle of English law that everyone shall be considered innocent until proved to be guilty; and this principle was followed in Mr. Justice Kaye's decision on Thursday. A petition was presented for the winding up of this company, in which allegations were contained to the following effect:—That the present applicants and other persons unknown combined together to get up a company, not really intending to get up a company, "but for the purpose of causing enormous sums to be paid over to themselves" as promoters, and that for that purpose they had caused certain "sham" agreements to be prepared. The applicants had not been served with the petition or made parties in any way. They now moved that these allegations should be struck out as being scandalous. Mr. Justice Kaye expressed his opinion in emphatic terms that the allegations complained of were scandalous, and ordered that they should be struck out, and that the copies of the petition delivered out should be recalled. The petitioner's advisers had pleasantly described the insertion of the words as a "clerical error," but his lordship could not adopt that view.

The Phosphor Bronze Company have paid an interim dividend for the past six months at the rate of 10 per cent. per annum.

#### Registration of New Companies.

The following joint-stock companies have been duly registered:—

ARGUS FIRE INSURANCE AND EMPLOYERS' PROTECTION CORPORATION (Limited).—Capital 1,000,000l., in shares of 10l. Fire insurance and granting insurances to protect principals and employers. The subscribers (who take 50 shares each) are—F. H. Walmsley, Higher Broughton; J. Leigh, Stockport; J. T. Griffin, 36, Worship-street; A. B. Joyner, 126, Bishopsgate-street; W. Beltingham, Upper Clapton; C. F. Frost, 123, Falmerton-buildings; A. R. Marten, 63, Queen Victoria-street.

INTERNATIONAL MILLING AND BAKING COMPANY (Limited).—Capital 50,000l., in shares of 10l. Bread and biscuit makers, millers, distillers, yeast manufacturers, &c. The subscribers (who take one share each) are—W. H. Richards, 36, Mark-lane; W. Smith, 8, Westbourne-terrace; L. Kenshel, 25, Fenchurch-street; W. J. Nelson, Temple; W. H. Golds, 15, St. Swithin's-lane; J. Norris, Paris; A. L. Brice, 11, Queen Victoria-street.

THE NEW ZEALAND THAMES VALLEY LAND COMPANY (Limited).—Capital 500,000l., in shares of 10l. The acquisition, improvement, subdivision, and sale of lands in the North Island of New Zealand, and the promotion of the settlement thereof. The subscribers (who take 100 shares each) are—W. H. A. Fielding, 162, Sloane-street; H. W. D. Saunders, 52, Lombard-street; S. Grant, Brigg; J. Clerk, 88, Parliament-street; E. P. W. Miles, 79, Gracechurch-street; R. M'Leod of M'Leod, 18, Hobart-place; W. Wilson, Holloway.

CHELTEMHAM COTTAGE COMPANY (Limited).—Capital 20,000l., in shares of 5l. The business of a land and building society. The subscribers are—C. Wilson, Cheltenham, 100; J. B. Smith, Cheltenham, 50; W. Fletcher, Cheltenham, 100; E. H. Gillilan, Cheltenham, 100; C. D. Bell, Cheltenham, 5; J. B. Evans, Cheltenham, 5; J. B. Sill, Cheltenham, 10; C. S. Holliday, Cheltenham, 5.

THE J. B. ROGERS ELECTRIC LIGHT AND POWER COMPANY (Limited).—Capital 510,000l., in shares of 5l. The business of electricians in connection with a certain patent. The subscribers are—J. F. Lavering, 77, Gresham-street, 1000; W. G. Rawlinson, 134, Cheapside, 100; T. F. Brooke, 157, Richmond-road, 20; T. E. Nicholson, Highgate, 40; J. Molyneux, Hackney, 20; C. W. Harris, 14, Golden-lane, 20; J. Chapman, Gresham-buildings, 20; B. Newstead, 100, Buckingham-road, 20; H. Moore, 59, Bishopsgate Within, 100.

UNITED KINGDOM COMMERCIAL TRADING COMPANY (Limited).—Capital 100,000l., in shares of 10l. Contractors for the supply of coal, iron, and all other materials and things, merchants, agents, and brokers, shipowners, &c. The subscribers (who take one share each) are—F. G. Fry, Liverpool; J. Siddeley, Liverpool; R. Lees, Crewe; W. Thomas, Liverpool; E. Coney, 9, New Broad-street; G. Heriot, 19, Birchin-lane; G. Wythes, Bickley Park.

#### POTENTITE.

This unrivalled Explosive, as manufactured by the New and Perfected Machinery of the Company, is perfectly safe or transit, storage, and use, and is employed in every description of Mining or Quarrying Work, for Tunnelling, Pit Sinking, Engineering Work, and Submarine Operations, with the most complete success and satisfaction.

Potentite does not contain its own MEANS OF IGNITION, is free from Nitro-Glycerine, and its SAFETY has been specially demonstrated by public experiments.

Its strength is unequalled.

Its action is certain.

In action it gives off neither flame, smoke, nor offensive smell. By its use labour is economised, as work can be resumed immediately after the shot is fired.

POTENTITE is specially adapted for export to hot climates, as it is unaffected by heat, and is free from dangerous exudations.

POTENTITE IS THE SAFEST STRONGEST, AND WORK FOR WORK, CHEAPEST EXPLOSIVE IN THE MARKET.

For particulars and prices, apply to the—

**THE POTENTITE COMPANY, LIMITED.**

HEAD OFFICE—3, FENCHURCH AVENUE, LONDON, E.C.

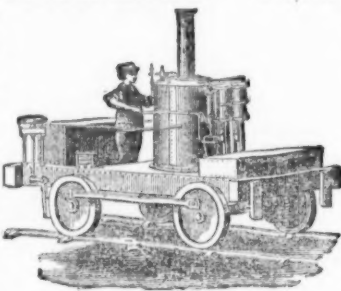
**THE ERIMUS STEEL COMPANY.**

POSTAL ADDRESS—MIDDLESBOROUGH.

MANUFACTURERS OF

**STEEL MINE RAILS OF ALL CURRENT SECTIONS.**

**CHAPLINS' PATENT CONTRACTORS' LOCOMOTIVES.**



9 to 27-horse power. Can be made to suit any gauge from about 2 ft. upwards, and are especially adapted for steep inclines and quick curves. They are strong and simple in construction, and geared to draw very heavy weights in proportion to their power. A large number are successfully working at QUARRIES, GASWORKS, RAILWAY SIDINGS, &c.

STEAM CRANES, portable and fixed, for Wharf or Rail.

STEAM and HAND DERRICK and OVERHEAD TRAVELLING CRANES,

HOISTING AND PUMPING ENGINES.

**Improved Steam Excavator or "Navy,"**

STEAM ROAD ROLLERS,

And other of our CHAPLINS' VERTICAL ENGINES and BOILERS, always in stock or in progress.

PATENTEE AND SOLE MANUFACTURERS.

**ALEX. CHAPLIN & CO., CRANSTONHILL ENGINE WORKS, GLASGOW.**

London House: 63, Queen Victoria Street, London, E.C.

**British and Foreign Safety Fuse Company,**

REDRUTH, CORNWALL,

MANUFACTURERS OF

**SAFETY FUSE,**  
FOR MINING AND QUARRYING PURPOSES.

PRICES ON APPLICATION

SILVER MEDAL (HIGHEST AWARD) MELBOURNE, 1881.

JOHN SPENCER,

Tube Works, West Bromwich, and 3, Queen Street Place, LONDON, E.C.

FIRST PRIZE, SYDNEY, 1880.

TUBES AND FITTINGS for Gas, Steam, and Water; Galvanised, Enamelled, and Hydraulic Tubes; Boiler Tubes and Fittings; Gas Fitters' Tools; Brass Cocks, &c.

ANTI-CORROSION TUBES AND FITTINGS COATED BY BARFF'S RUSTLESS PROCESS.

**TUBES**



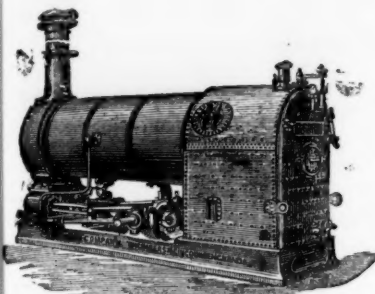
HIGHEST AWARD MELBOURNE EXHIBITION, 1881.

**ROBEY & CO., ENGINEERS, LINCOLN.****NOTICE.**

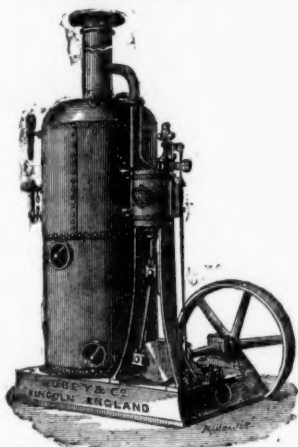
TO COLLIERY PROPRIETORS, MINE OWNERS, &amp;c.

**The Patent "Robey" Mining Engine**

Is complete in itself, ready for putting down and setting to work immediately, either as a permanent or temporary Winding or Pumping Engine.



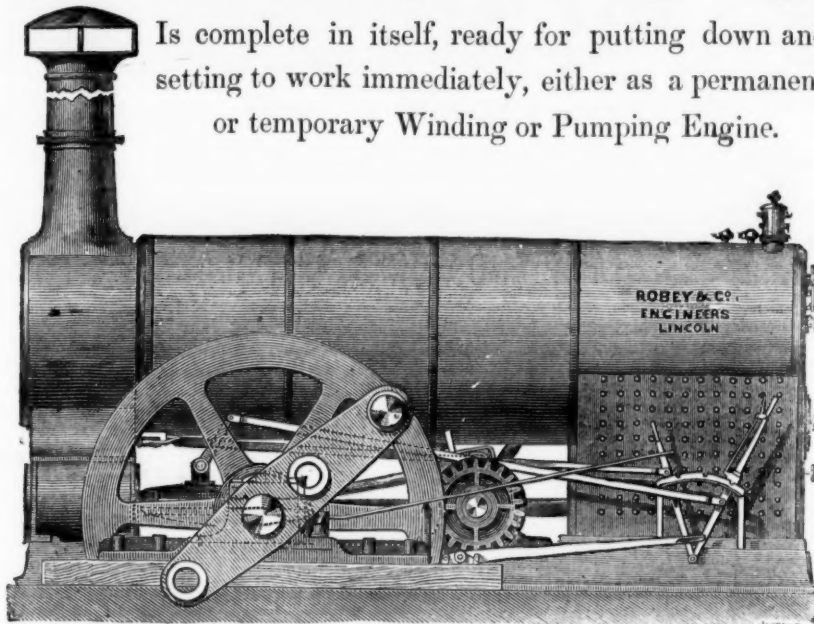
THE PATENT ROBEY FIXED ENGINE AND LOCOMOTIVE BOILER COMBINED  
4 to 50-horse power.



VERTICAL STATIONARY STEAM ENGINE AND PATENT BOILER COMBINED,  
1½ to 16 horse power.



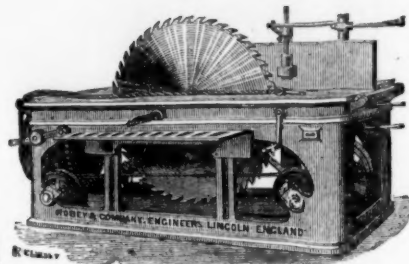
SUPERIOR PORTABLE ENGINES,  
4 to 50-horse power.



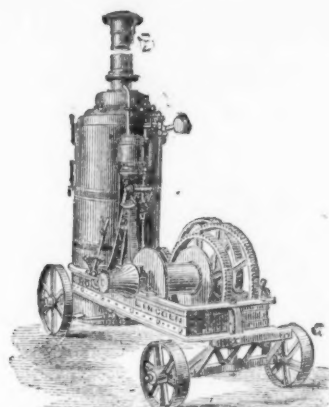
ALL SIZES KEPT IN STOCK, FROM 6 TO 50-H.P. NOMINAL.

For particulars and prices, apply to the

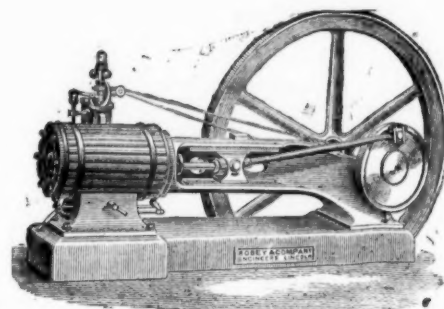
PATENTEES AND SOLE MANUFACTURERS,

**ROBEY & CO., ENGINEERS, LINCOLN.**

SELF-ACTING CIRCULAR SAW BENCH.



ROBEY & CO. LINCOLN, ENGLAND.  
IMPROVED HARROW LIFT, or VERTICAL  
HOISTING ENGINE.



HORIZONTAL FIXED ENGINES,  
4 to 60-horse power.

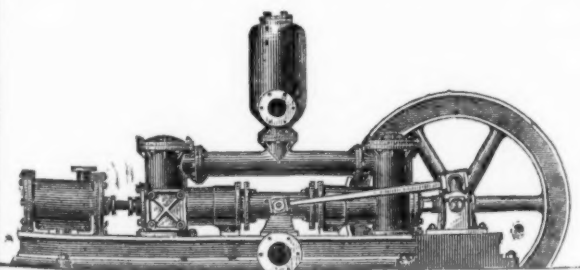
ESTABLISHED 1850

**WILLIAM TURNER,**

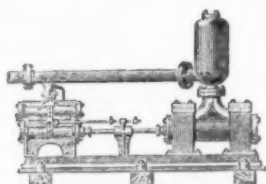
(LATE OMMANNEY AND TATHAM),

**SALFORD, MANCHESTER.****FLY WHEEL PUMPING ENGINES**

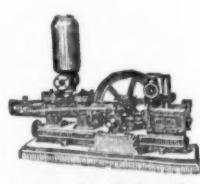
ARE THE ONLY RELIABLE ENGINES FOR STEADY WORK AND ECONOMY.



The "Original" Double-acting Ram Pumping Engine.



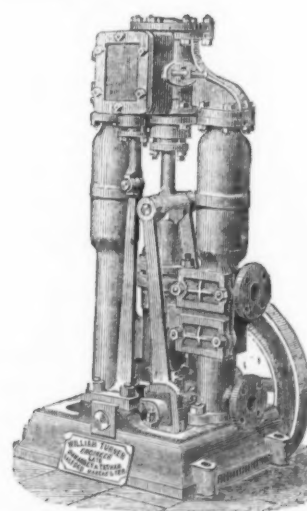
Hydraulic Pumping  
Engine for Collieries.  
Worked by Natural Head of  
Water, and saving much manual  
labour.



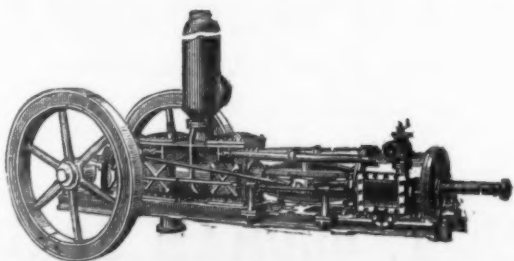
Double-acting Horizontal  
Pumping Engine.  
For Feeding Boilers,  
Gas Works, Tanneries,  
Breweries, and all  
Pumping Purposes.



WIPPERMANN  
AND LEWIS'S  
PATENT  
AIR INJECTOR.  
These Injectors are being  
universally adopted for  
Pumping Engines for  
Collieries & Waterworks.



The  
Salford Pump.



Direct Double-acting Piston Pumping Engine.

PUMPING ENGINES of all descriptions.

WINDING Ditto.

AIR COMPRESSORS.

HYDRAULIC ENGINES.

VALVES for Steam, Water, &amp;c.



**ROOT'S PATENT**  
**TUBULOUS STEAM BOILER**  
 SAFE & ECONOMICAL  
 EASY TRANSPORT IN MOUNTAINOUS COUNTRIES  
**KNAP'S PATENT MECHANICAL STOKERS**  
 APPLICABLE TO ALL KINDS OF BOILERS & FURNACES  
 ECONOMICAL AND SMOKE CONSUMING  
**THE PATENT STEAM BOILER CO.**  
 HENEAGE STREET  
**BIRMINGHAM**

**ALEX. WILSON & CO.,**  
 VAUXHALL IRONWORKS,  
 LONDON, S.W.,



MANUFACTURERS OF  
 THE VAUXHALL DONKEY PUMPS.  
 THE EXCELSIOR DIRECT-ACTING PUMPS.  
 Air Compressors.  
 Winding Engines.  
 HOISTING MACHINERY.

ILLUSTRATED AND PRICED CATALOGUES ON APPLICATION.

**JOSEPH FIRTH AND SONS'**  
**New Patent Brick-making Machine,**

Embraces the following advantages—viz.:  
 implicitly, strength, and durability. Compactness and excellence of mechanical arrangements, large producing capabilities, moderate cost.  
 It makes two bricks at once, and will make 2,000 to 14,000 plastic pressed bricks per day, hard enough to go direct to the kiln without drying; or it will make the bricks thoroughly plastic if required. For works requiring a machine which cost the machine is made to turn out one brick at once, and is capable of producing 8000 bricks per day.  
 The Machine can be seen at work daily at the Brickworks of the Patentees, JOSEPH FIRTH AND SONS, WEBSTER HILL, DEWSBURY, and CROWBURY BRICK WORKS, SUSSEX; as also their Patent Gas Kiln for Burning Bricks, which possesses the following amongst other advantages, viz.:—Economy in Fuel, Rapidity and Quality of Work, even Distribution of Heat, and Total Consumption of Smoke.



By a special method of preparation this leather is made solid, perfectly close in texture and impermeable to water; it has, therefore, all the qualifications essential for pump buckets, and is the most durable material of which they can be made. It may be had of all dealers in leather, and of—

**HEPBURN AND GALE,**  
 TANNERS AND CURRIERS,  
 LEATHER MILL BAND AND HOSE PIPE MANUFACTURERS,  
 LONG LANE, SOUTHWARK LONDON.  
 Prize Medals, 1851, 1855, 1878, for  
 MILL BANDS, HOSE, AND LEATHER FOR MACHINERY PURPOSES.

**W. F. STANLEY**

MATHEMATICAL INSTRUMENT MANUFACTURER TO H.M.'S  
 GOVERNMENT, COUNCIL OF INDIA, SCIENCE AND  
 ART DEPARTMENT, ADMIRALTY, &c.  
 MATHEMATICAL, DRAWING, and SURVEYING INSTRUMENTS of every  
 description, of the highest quality and finish, at the most moderate prices.  
 Price List post free.  
 ENGINE DIVIDER TO THE TRADE.  
 ADDRESS—GREAT TURNSTILE, HOLBORN, LONDON, W.C.

**LIEBIG'S EXTRACT OF MEAT AND MALT WINE**  
 (COLEMAN'S).  
 A DELICIOUS BEVERAGE AND TONIC.

IMPORTANT TESTIMONIAL.

Queen's Crescent, Haverstock Hill, London, March 5th, 1881.  
 DEAR SIR,—Some time since, being greatly fatigued with overwork and long hours at business, my health (being naturally delicate) became very indifferent. I lost all energy, strength, and appetite, and was so weak as to be scarcely able to walk.

As you are aware, I sent for a dozen of your Extract of Meat and Malt Wine, which, in a few days, pulled me up marvellously. Three or four glasses of it daily have quite altered and restored me to better health than ever, "without the assistance of a doctor."

I am now giving it to my son, twelve years of age, whom we have always thought consumptive, and from a puny ailing boy he seems to be fast growing into a strong healthy lad.

Enclosed you have cheque. Please send me two dozen of the "Extract." With thanks for your prompt attention to my last.

I am Sir, yours truly,  
 GEORGE A. TYLER.  
 Pints, 30s.; Quarts, 50s. per dozen. Carriage Paid to any Railway Station.  
 Sample Bottle sent for 33 stamps.  
 Post-Office Orders and Cheques payable to—  
 COLEMAN AND CO.,  
 MUSPOLE STREET, NORWICH.

Sold by all Druggists in Bottles 2s. 9d. and 4s. 6d. each. Ask for Coleman's Liebig's Extract of Meat and Malt Wine, and "See that you get it."

WHAT IS YOUR DISEASE—WHAT IS YOUR REMEDY?  
 GRATIS, free by post on receipt of Two Stamps to pay Postage  
**THE BOOK OF POSITIVE REMEDIES.**—  
 It is the Book of Positive Medicine for the Cure of certain forms of Debility and Nervousness—viz.: Mental and Physical Depression, Palpitation of the Heart, Noises in the Head and Ears, Impaired Sight and Memory, Indigestion, Pains in the Back, Headache, Piles, Constipation, Hysteria, Dizziness, Local Weakness, Muscular Relaxation, Nervous Irritability, Blushing, &c., resulting from Exhaustion of Nerve power, effect of Overwork, City Life, Worry, Brain Felt Intemperance, and other abuses of the system.  
 H. and H. SMITH and Co., Positive Remedy Laboratory, 26, Southampton-row London, W.C.

**1880-81.—MELBOURNE (AUSTRALIA) EXHIBITION.**  
 Portable Engine—Gold Medal. Thrashing Machine—Gold Medal.



The Royal Agricultural Society of England have awarded  
 Every First Prize to CLAYTON and SHUTTLEWORTH  
 for Portable and other Steam Engines since 1863, and Prizes  
 at every Meeting at which they have competed since 1849.

**GOLD MEDALS, AND OTHER PRIZES,**

Have been awarded to CLAYTON AND SHUTTLEWORTH at the  
 various International Exhibitions of all Nations, including  
 LONDON, 1851, 1862; PARIS, 1855, 1867, 1878; VIENNA,  
 1857, 1866, 1873;

for their  
**STEAM ENGINES, Portable and Fixed**  
 (For Coals, Wood, Straw, and every description of Fuel.)

**TRACTION ENGINES, &c.**

Catalogues in English and in all Continental Languages  
 free on application.

**CLAYTON AND SHUTTLEWORTH,**  
 STAMP END WORKS, LINCOLN, & 78, LOMBARD STREET, LONDON.

LONDON—1862.



CHILI—1875.



ESTABLISHED 1848.

**W. BRUNTON AND CO.,**  
 43, Cornwall Buildings, Queen Victoria  
 Street, London,  
 MANUFACTURERS OF

**ALL KINDS OF SAFETY FUSE.**

SILVER MEDAL (HIGHEST AWARD), MELBOURNE  
 EXHIBITION, 1881, for

"EXCELLENCE OF MANUFACTURE."

Works: Penhellick Safety Fuse Works, Redruth, Cornwall and  
 Cambrian Safety Fuse Works, Wrexham, North Wales.  
 LIVERPOOL OFFICE—8A, ALBERT BUILDINGS, PREESON'S ROW.

PARIS—1878.



MELBOURNE—1881



**FRANCIS MORTON AND CO., LIMITED, LIVERPOOL.**

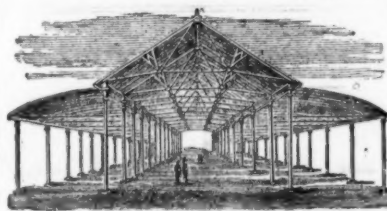
MANUFACTURERS OF

**GALVANISED CORRUGATED IRON ROOFS, BUILDINGS, AND SHEDDING,**

WHICH THEY HAVE EXTENSIVELY ERECTED FOR THE REQUIREMENTS OF

**Forges, Rolling Mills, Puddling Sheds, Ironworks, and Collieries**

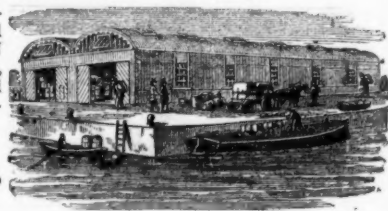
Erected Complete in this Country, or prepared to Plan for Erection Abroad.



OPEN SHED FOR COVERING LARGE AREAS.

GALVANISED OR PAINTED CORRUGATED IRON ROOFING PLATES and TILES. HEAVY CORRUGATED IRON PLATES for fireproof floors, roadways, parapets, &c. (for producing which F. M. and Co. have recently laid down powerful Hydraulic Machinery). Wrought-iron T. Guttering, and General Constructive Wrought Ironwork.

DESIGNS PREPARED, AND ILLUSTRATED  
 DESCRIPTIVE CATALOGUES FORWARDED  
 ON APPLICATION



GENERAL STORE FOR WHARF, ETC.

London Office: 1, Delahay Street (first door out of Great George Street), Westminster, S.W.

ESTABLISHED 1852.

**SYBRY, SEARLS, AND CO.,**

MANUFACTURERS OF THE

**CELEBRATED MINING STEEL, BRANDED**

Cast Steel, Shear, Blister, Spring, Hammer, and Pick Steel.

**Special Rock Drill Steel.**

Mining Tools, Files, Saws, Hammers, and Picks.

**CANNON STEEL WORKS, SHEFFIELD.**

**JOHN MARSDEN,**

MANUFACTURER OF

**Air Tubing and Improved Brattice Cloth,**

Tarred, Oiled, and Non-Inflammable.



THE OILED CLOTH IS ESPECIALLY RECOMMENDED FOR DAMP MINES, AND IS  
 ALSO A GOOD COVERING FOR SHEDS.  
 THE NON-INFLAMMABLE FOR THE MORE DANGEROUS MINES.

Samples and prices free, on application at the Works,

**VARLEY STR T, OLDHAM ROAD**  
**MANCHESTER.**

ALSO MANUFACTURER OF PACKING FOR ENGINES, PUMPS, &c., and STEAM HAMMER RINGS



THE DYNAMO-ELECTRIC MACHINE SUPERSEDES EVERY KNOWN BATTERY.

# WILLIAM ELMORE,

## 91, BLACKFRIARS ROAD, LONDON, S.E.

## SPECIALITIES.

THE

## "Elmore" Dynamo-Electric Machine

Special Polishing Machinery and Materials.

## SPECIAL ELECTRO-DEPOSITING SOLUTIONS

For depositing **Copper** in any thickness upon rough castings or polished Iron objects of any size or weight, Locomotive Boiler Tubes, Iron Railings, Ornamental Lamp Posts, Garden Seats, Iron Sheets, and parts of heavy Iron Structures.

For depositing **Brass** upon Ornamental Iron Work, Fenders, Fire Irons, Locks, Bright Steel Goods, and upon articles made of **Lead, Pewter, Zinc, Tin, and Britannia Metal.**

For depositing **Tin** upon Bright Steel Goods, or upon rough Iron. The insides of **Iron or Copper Pans, Kettles, and Culinary Utensils** (Chemically pure).

For depositing **Copper** reproductions of **Art Subjects, Stove and Door Panels, Plates, Medallions, &c.,** from Plaster, Wax, or other Moulds.  
For Covering the most delicate **Ferns, Flowers, Insects, &c.,** by which perfect facsimiles can be obtained in **Copper** and finished in **Silver, Gold,** or other Metals, or various coloured oxides, forming the most elegant ornaments which can be manufactured at a nominal cost.

For depositing **Electrotypes** for Printers, Steel Plate and Bank Note Engravers, &c.

For depositing **Steel or Nickel** upon **Copper Electrotypes**, to protect the surfaces from the action of Mercurial Inks, and at the same time preserving the clear brilliancy of vermilion, and other colours having mercury in their composition.

For depositing **Tin** upon the backs of **Electrotypes**, completely superseding the old method.

For depositing **Gold, Silver, Nickel, Bronze, Zinc, &c.,** in **Electro-Plating.**

## SPECIALITIES.

THE

## "Elmore" Dynamo-Electric Machine

For **ELECTRIC LIGHTING** (Arc and Incandescence) for Public Streets and Gardens, large Open Spaces, Theatres, Factories, Workshops, Hotels, Houses, &c.

ENTIRE SYSTEM COMPLETE, EFFICIENT, AND INEXPENSIVE.

Special Apparatus for the application of **Ozone** and other Gases for Bleaching Oils, Sugars, Fabrics, &c.

Complete Outfits. The "Elmore" Machines and appliance for

TIN-PLATE MANUFACTURE.

Complete Outfits. The "Elmore" Machines and appliance for

GALVANIZING.

Complete Outfits. The "Elmore" Machines and appliance for

REFINING METALS.

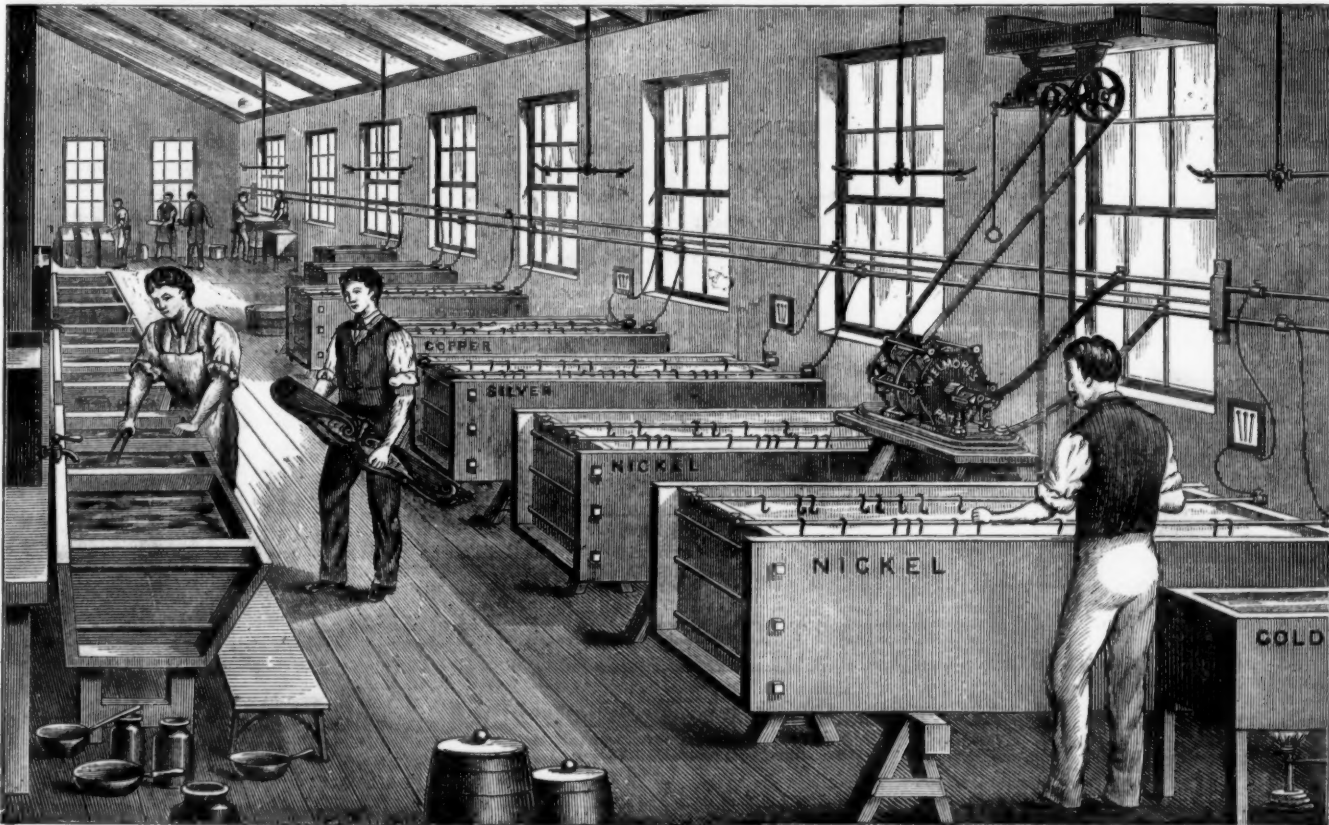
Complete Outfits. The "Elmore" Machines and appliance for

EXTRACTING METALS FROM ORE,

Complete Outfits. The "Elmore" Machines and appliance for

GENERATING OXYGEN,

Hydrogen, Chlorine, Ozone, and other Gases.



The above represents an Electro-Plating Works in which an "ELMORE" PATENT DYNAMO-ELECTRIC MACHINE is being used for the simultaneous deposition of Nickel, Silver, Copper, Bronze, Brass, Gold, Tin, Zinc, &c., from their Solutions.

## TESTIMONIALS, &amp;c.

From the "HARDWARE TRADE JOURNAL,"  
A MODERN PLATING ESTABLISHMENT.

"Mr. WILLIAM ELMORE, of 91, Blackfriars Road, London, S.E., is busily engaged fitting up the Art Metal Depositing Works of the Electrolytic Company, Charlotte Street, Blackfriars. The Electro-plating tanks of nickel, copper, brass, zinc, and tin, holding several thousands of gallons each (worked by an 'Elmore' Patent Dynamo-Electric Machine, capable of depositing about 500 lbs. of metal per day), and the specially designed and constructed polishing machinery will all combine to constitute this most gigantic and complete arrangement of the kind in the world. Here boiler tubes, each over 20 ft. in length, may be coated with copper, large ornamental iron lamp posts, and similar massive iron structural objects of great weight may be covered with electro-deposited copper, forming, when finished, a complete shell of bronze, which may be nickel-plated, or even silver-plated, if desired. Large rough or polished iron surfaces may be coated with brass, or zinc, or tin. Copper electrolytic copies are taken of art subjects, the reproduction being so perfect that the process is used for multiplying plates from which bank-notes are printed, and the most delicate ferns, flowers, leaves, and insects are coated with copper, and afterwards with gold, silver, nickel, &c., for use as ornaments of various kinds. Fenders, fire-irons, grates, &c., may be brassed. The largest marine engines may be nickel-plated in the large nickel-plating plant, worked by the powerful 'Elmore' machine with ease and certainty, which only a few months since would have been pronounced almost impossible. The Electrolytic Company, we understand, express perfect satisfaction with the work already completed by Mr. Elmore, and there is no doubt that with that gentleman's large practical experience the company could not have been in better hands. The entire premises will be lighted by the 'Elmore' system of electric light."

From the "LONDON MINING JOURNAL."

"The new 'Elmore' Dynamo-Electric Machine can be seen in operation in London, and is considered one of the most wonderful scientific apparatus which has yet been brought before the public; it should be inspected by all who are interested in any kind of metallurgical operations."

"Mr. ELMORE has just received two pieces of ordnance from Her Majesty's Works at Chatham, with an order to nickel-plate the same, together with the carriages upon which they are mounted. Mr. Elmore has done similar work for the Government on previous occasions, and it will be remembered that the screw propellers used on the torpedo boats were nickel-plated by him. The 'Elmore' Dynamo-Electric Machines and complete electro-plating outfits have been supplied to Government Departments at home and abroad."

From the NICKEL PLATING COMPANY,

12, GREEK STREET, SOHO.

Your Machine does its work most satisfactorily, and has never once reversed current, which the Weston Machine frequently did."

From the ELECTROLYTIC COMPANY,

ART METAL DEPOSITING WORKS,  
CHARLOTTE STREET, BLACKFRIARS, LONDON.

"The 'Elmore' Dynamo-Electric Machine and entire outfit which you have supplied to this company have given perfect satisfaction."

From the NICKEL AND SILVER PLATING WORKS,

2, CHARLES STREET, CURTAIN ROAD, E.C.

"Having had one of the 'Elmore' Patent Dynamo-Electric Machines in constant use for several months, it gives me great pleasure to say that with it I have been able to deposit four times the weight of metal per day which I had been enabled to do with the Dynamo-Electric Machine, which it has displaced in my establishment."

From the LONDON NICKEL PLATING COMPANY.

"We have much pleasure in expressing our entire satisfaction with the nickel-plating solution, anodes, and Dynamo Machine that you have supplied us with."

From the DYNAMO-ELECTRIC PLATING WORKS,

2, OLD SWAN LANE, LONDON.

"The quality of the nickel solutions and anodes at these works, which were supplied by you, is most satisfactory in every way. The Dynamo Machine also works excellently, and has given no trouble whatever since it has been started."

AND MANY OTHERS.

Dynamo-Electric Machines, Outfits, &c., supplied to (London) Messrs. Thos. De la Rue and Co., Cassell, Petter, and Galpin, The India Rubber Company (Limited), Silvertown, The Nickel Plating Company, Joseph Woodricka, Kelly and Co., A. S. Cattell and Co., &c., &c., (Birmingham) Messrs. Wright and Butler, Joseph Woodward, The Griffin Gilding and Plating Company, and over 500 others.

SEND FOR COMPLETE DESCRIPTIVE CATALOGUE, PRICE 6D.

WILLIAM ELMORE, 91, BLACKFRIARS ROAD, LONDON, S.E.

COMPLETE WORKING OUTFITS SUPPLIED.



ROYAL AGRICULTURAL SHOW, READING, July 10 to 14 inclusive—Stand 271.—MACHINERY IN MOTION DEPARTMENT.—H. R. MARSDEN will exhibit IN FULL OPERATION his new patent Fine Crusher or Pulveriser, 12 by 3 inches at the mouth; also his Improved Patent Stonebreaker, 15 by 10 inches at the mouth. Parties interested are invited to bring samples of material, and to see them reduced.

PARIS EXHIBITION, 1878. GAINED THE GRAND PRIZE. THE TRIPLE AWARD. Gold Medal, Silver Medal, and Honourable Mention in competition with all the World.

THE BLAKE-MARSDEN NEW PATENT IMPROVED STONE BREAKERS AND ORE CRUSHERS.

ORIGINAL PATENTEE  
AND ONLY MAKER.

ALSO PATENTEE AND ONLY  
MAKER OF THE

# H. R. MARSDEN, NEW PATENT FINE CRUSHER OR PULVERIZER,

FOR REDUCING TO AN IMPALPABLE POWDER, OR ANY DEGREE OF FINENESS REQUIRED,

GOLD QUARTZ, SILVER, COPPER, TIN, ZINC, LEAD,  
AND ORES OF EVERY DESCRIPTION;

Also Cement, Barytes, Limestone, Chalk, Pyrites, Coprolite, &c., &c. These Machines are in successful operation in this country and abroad, and reference to users can be had on application.

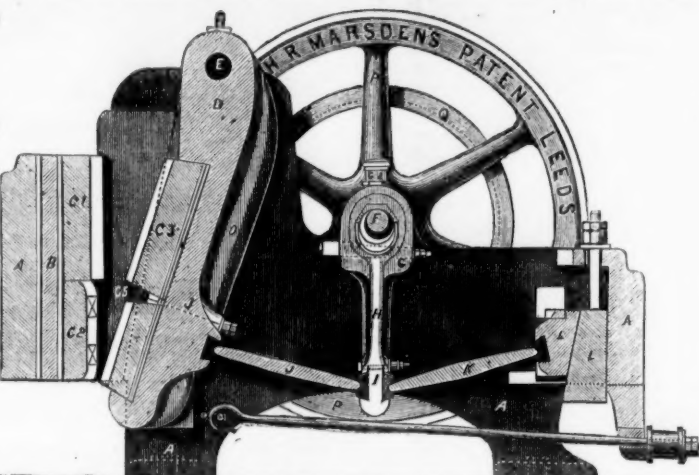
PATENT REVERSIBLE CUBING and CRUSHING  
JAWS, IN FOUR SECTIONS,  
WITH PATENT FACED BACKS, REQUIRING  
NO WHITE METAL IN FIXING.

NEW PATENT CRUCIBLE CAST-STEEL CONNECTING  
RODS.  
NEW PATENT RENEWABLE TOGGLE CUSHIONS, &c.

OVER 4000 IN USE.

EXTRACT FROM TESTIMONIALS.  
PULVERISER.

"I have great pleasure in bearing testimony to the merits and capabilities of your patent combined fine crusher and sieving apparatus. I have tried it on a variety of ores and minerals, and it pulverizes them with equal success. You can put in a small paving stone, and bring it out like flour."  
"The power required to drive it is very small, being from 4 to 5-horse, and the repairs are almost nil."  
"I am sure the machine will be a success, and a great one, and there is any amount of demand for such a machine. We can work it with 20 lbs. of steam, and our engine, which is a 12-h.p., plays with the work, in fact we run the Stonebreaker and the Pulveriser both together with 35 lbs."



AWARDED OVER

60

FIRST-CLASS GOLD AND SILVER MEDALS.

ADOPTED BY THE PRINCIPAL CORPORATIONS, CON-  
TRACTORS, MINING COMPANIES, &c., IN ALL  
PARTS OF THE WORLD.

ROAD METAL BROKEN EQUAL TO HAND, AT  
ONE-TENTH THE COST.

EXTRACTS FROM TESTIMONIALS.  
STONEBREAKER.

"The 15 x 8 stonebreaker gives perfect satisfaction. It produces a more cubical stone than any others I have seen at work."  
"Your 15 x 10 machine makes the best road metal I have ever seen put through a machine—in fact, comparing favourably with hand broken."  
"Your 10 x 7 crusher at the Aruba Gold Mines will crush 90 to 100 tons per 24 hours of the hardest gold quartz to 1' size."  
"Some of your testimonials do not give your machines half their due. I have seen men hammering away on a big rock for a quarter of a day which your machine would reduce to the required size in a quarter of a minute. I would guarantee that your largest size machine would reduce more of the Cornish tin capels (which is the hardest rock of England) in a day than 200 men, and at 1-25th the cost."  
GREATLY REDUCED PRICES ON APPLICATION.

FOR CATALOGUES, TESTIMONIALS, &c., APPLY TO THE SOLE MAKER,

H. R. MARSDEN, SOHO FOUNDRY, LEEDS.

## JOHN CAMERON'S

FLY-WHEELS ON BOTH SIDES.

SPECIALITIES ARE HIS

### STEAM PUMPS

FOR

#### COLLIERY PURPOSES.

Specially adapted for forcing Water any height

ALSO, FOR

#### SINKING, FEEDING BOILERS AND STEAM FIRE ENGINES,

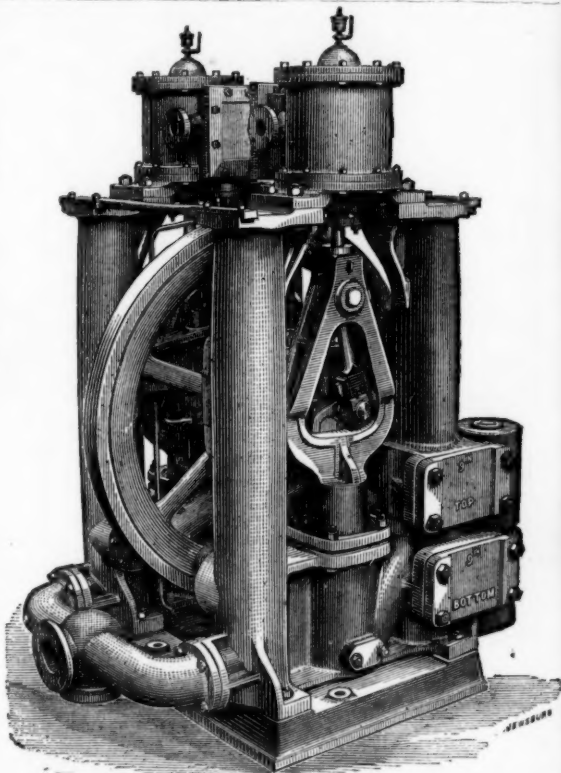
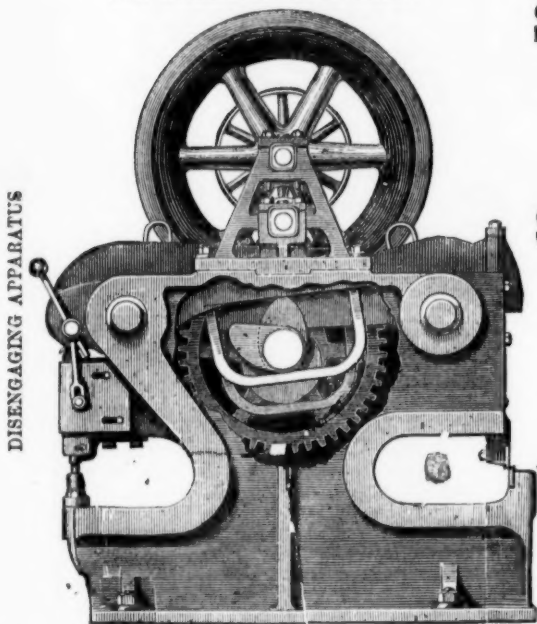
which he has made over 8000.

ALSO, HIS

PATENT CAM AND LEVER

#### PUNCHING AND SHEARING MACHINES.

Works: Oldfield Road, Salford,  
Manchester.



### "KING AND HUMBLE'S" PATENT DETACHING HOOK

To prevent over winding

#### PATENT SAFETY CAGE,

suspend in Shaft in cases of fracture of Winding Rope

Winding and Hauling Engines,  
Special Centrifugal Pumps,  
Weighing Machines,  
Steel Castings, Mining Steel and Tools,  
Winches, Steel Shovels, Pulleys,  
Mining Machinery of every description.  
Brick Machinery and Mortar Mills.

Stephen Humble, Engineer, Derby.



HULME & LUND'S SPECIALITIES.  
DONKEY PUMPS, MINING PUMPS,  
HORIZONTAL PUMPS, TAR PUMPS,  
AIR COMPRESSORS,  
FIRE ENGINES, STEAM ENGINES,  
WILBURN IRON WORKS  
SALFORD, MANCHESTER.

ENGLISH CAPITALIST wishing a CORRECT REPORT on the  
SILVER MINES of COLORADO will do well to apply to—  
Capt. DANIEL ROBERTS, Georgetown, Colorado.

### THE "CHAMPION" ROCK BORER

MINES AND QUARRY STANDS, STEEL DRILLS, SPECIALLY PREPARED INDIANRUBBER HOSE, TESTED  
IRON PIPES, &c.



#### Air-Compressing Machinery,

Simple, strong, and giving most excellent results.

Full particulars of rapid and economical work effected  
by this machinery, on application.

R. H. HARRIS,

ENGINEER,

63, QUEEN VICTORIA STREET, LONDON, E.C.

### J. WOOD ASTON AND CO., STOURBRIDGE

(WORKS AND OFFICES ADJOINING CRADLEY STATION),

Manufacturers of

#### CRANE, INCLINE, AND PIT CHAINS.

Also CHAIN CABLES, ANCHORS, and RIGGING CHAINS, IRON and STEEL SHOVELS, SPADES,  
FORKS, ANVILS, VICES, SCYTHES, HAY and CHAFF KNIVES, PICKS, HAMMERS, NAILS,  
RAILWAY and MINING TOOLS, FRYING PANS, BOWLS, LADLES, &c., &c.

Crab Winches, Pulley and Snatch Blocks, Screw and Lifting Jacks, Ship Knees, Forgings, and Use Iron of all descriptions

#### WELDED STEEL CHAINS

FOR CRANES, INCLINES, MINES, &c.,  
MADE ALL SIZES.